PATENT ABSTRACTS OF JAPAN

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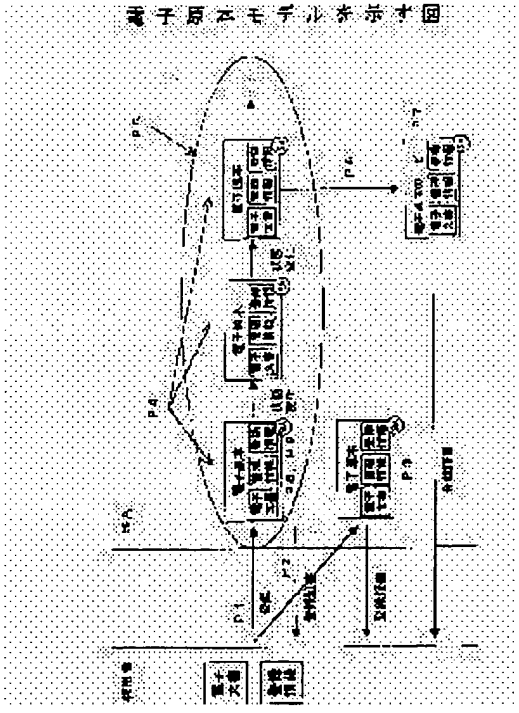
ONO KOSHIO

(54) DEVICE AND METHOD FOR ELECTRONIC ORIGINAL MANAGEMENT

(57)Abstract:

PROBLEM TO BE SOLVED: To manage the original of an electronized important document more safely.

SOLUTION: The electronic original managing device is provided separately from the computer environment of a user and an electronic document is registered as an electronic original. The electronic original managing device issues a registration certificate for uniquely identifying the electronic original and the user accesses the electronic



original by using the issued registration certificate.

LEGAL STATUS

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[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the principle Fig. of the electronic original management equipment of this invention.
[Drawing 2] It is drawing showing an electronic original model.
[Drawing 3] It is the block diagram of an electronic original managerial system.
[Drawing 4] It is the block diagram of a secure archiver.
[Drawing 5] It is the flow chart of processing of a secure archiver.
[Drawing 6] It is drawing showing a document record.
[Drawing 7] It is drawing showing management of an original sequence.
[Drawing 8] It is drawing showing time series management.
[Drawing 9] It is drawing showing discernment of original and a copy.
[Drawing 10] It is drawing showing management by the type attribute.
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[Drawing 12] It is drawing showing detection of an illegal copy.
[Drawing 13] It is drawing showing change of identification information.
[Drawing 14] It is drawing showing generation of Discernment ID.
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[Drawing 17] It is drawing showing registration processing.
[Drawing 18] It is drawing showing retrieval processing.
[Drawing 19] It is drawing showing document record verification processing.
[Drawing 20] It is drawing showing identity verification processing.
[Drawing 21] It is drawing showing an update process.
[Drawing 22] It is drawing (the 1) showing migration processing.
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[Drawing 24] It is drawing showing check-out check-in processing.
[Drawing 25] It is drawing showing state-transition acquisition processing.
[Drawing 26] It is drawing showing state-transition information.
[Drawing 27] It is the block diagram of an information processor.
[Drawing 28] It is drawing showing a record medium.
[Description of Notations]
1 Registration Means
2 Grant Means
3 Management Tool
4 Issue Means
11 21 Secure archiver
12 Service Client
13 Local Environment
14, 74, 95, 97, O1, O2, O3 Electronic original
15, 83, 94, 96, R1, R2, R3 Document record
16 Secure Medium
22 User Terminal
31 Network Interface
32 Demand Interpretation Section
33 Answerback Creation Section
34 Original Sequence Management Department
35 Registration Bond Creation Section
36 Document Storage Section
37 Physical ID Creation Section
38 Cipher-Processing Section
39 Key Attaching Part
40 Discernment ID Creation Section
41 Time-of-Day Generation Section
42 Equipment ID Attaching Part
43 Incremental Counter
51 82,104 Hash value
52 68 Discernment ID
53 Electronic-Filing-Document Name by the side of User
54 User ID
55 Connection Place Information on SA
56 Signature of SA
61 SID1, SID2 Original sequence ID
62 Type Attribute

63 T1, T2, T3, T Four, T5 Time Stump
64 Individual Key of SA
66 Logical Identifier ID
67 PID1, PID2, PID3, PID4 Physics ID
71, 93, D1 and D 1-1, D 1-2, D 1-3, D 1-4, D 1-5, D1-C, D2 and D 2-1, D 2-2, D 2-3, D 2-4, D 2-5 Electronic filing document
72, G1 and G2, G3 Registration information
73 M1, M2, M3 Management information
81 Document Record Information
91 92 File name
98 Verification Result
101 Information on Migration Place SA
102 Pack DODETA
103 Denial Prevention Record
105 State-Transition Information
111 CPU
112 Memory
113 Input Unit
114 Output Unit
115 External Storage
116 Medium Driving Gear
117 Network Connection Equipment
119 Portable Record Medium
120 Database
S1, S2 Original sequence
AID1, AID2, AID3, AID4 Address ID

[Translation done.]

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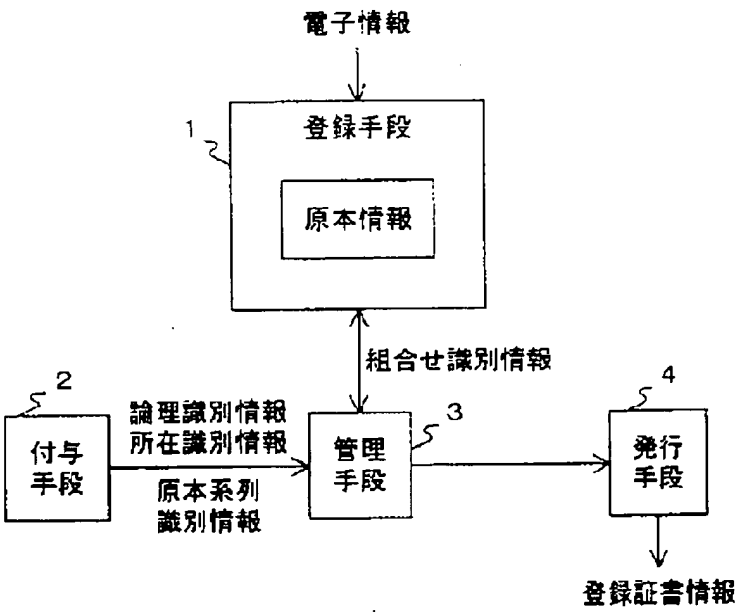
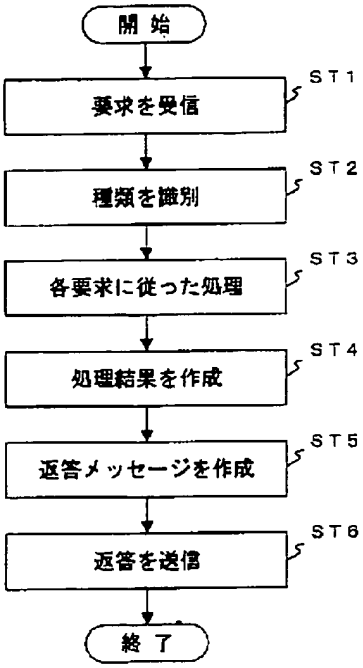
DRAWINGS

[Drawing 1]
本　発　明　の　原　理　図



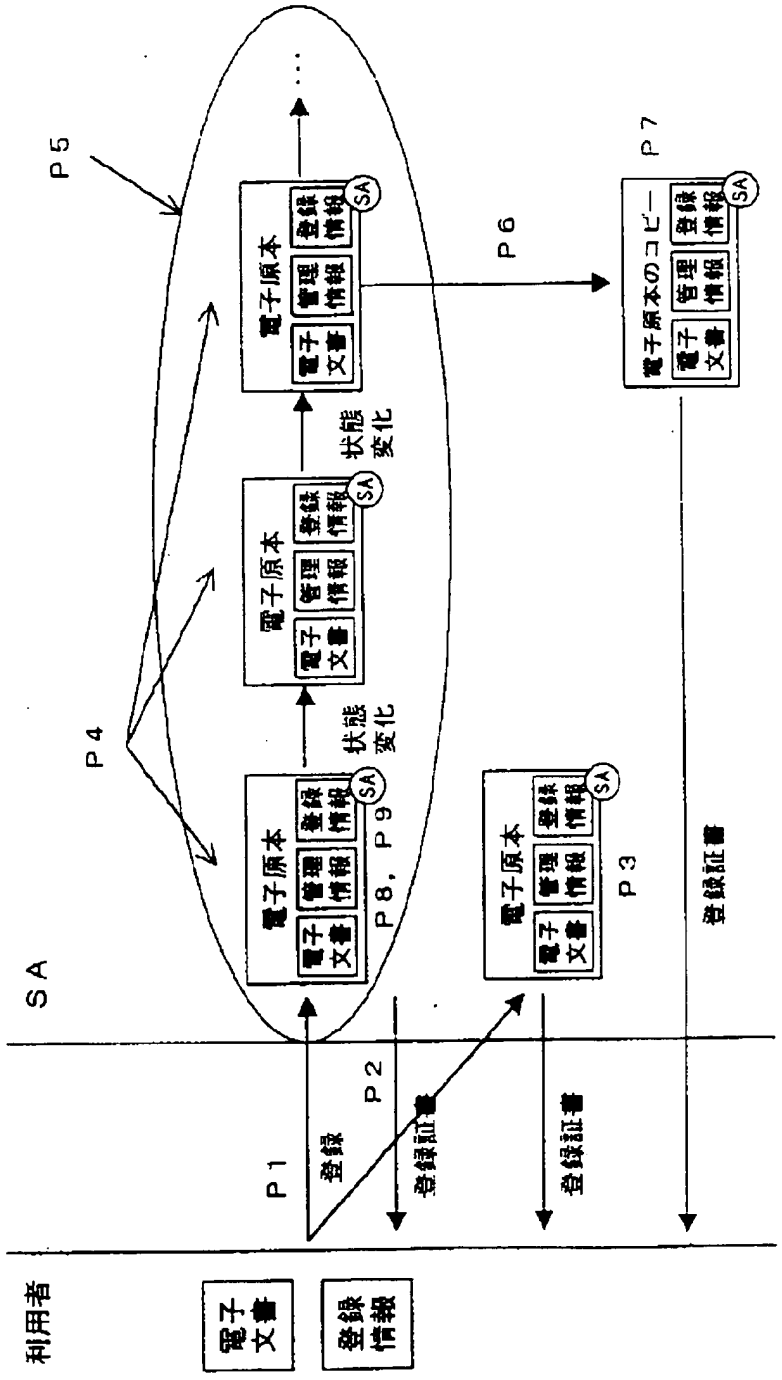
[Drawing 5]

セキュアアーカイバの
処理のフローチャート



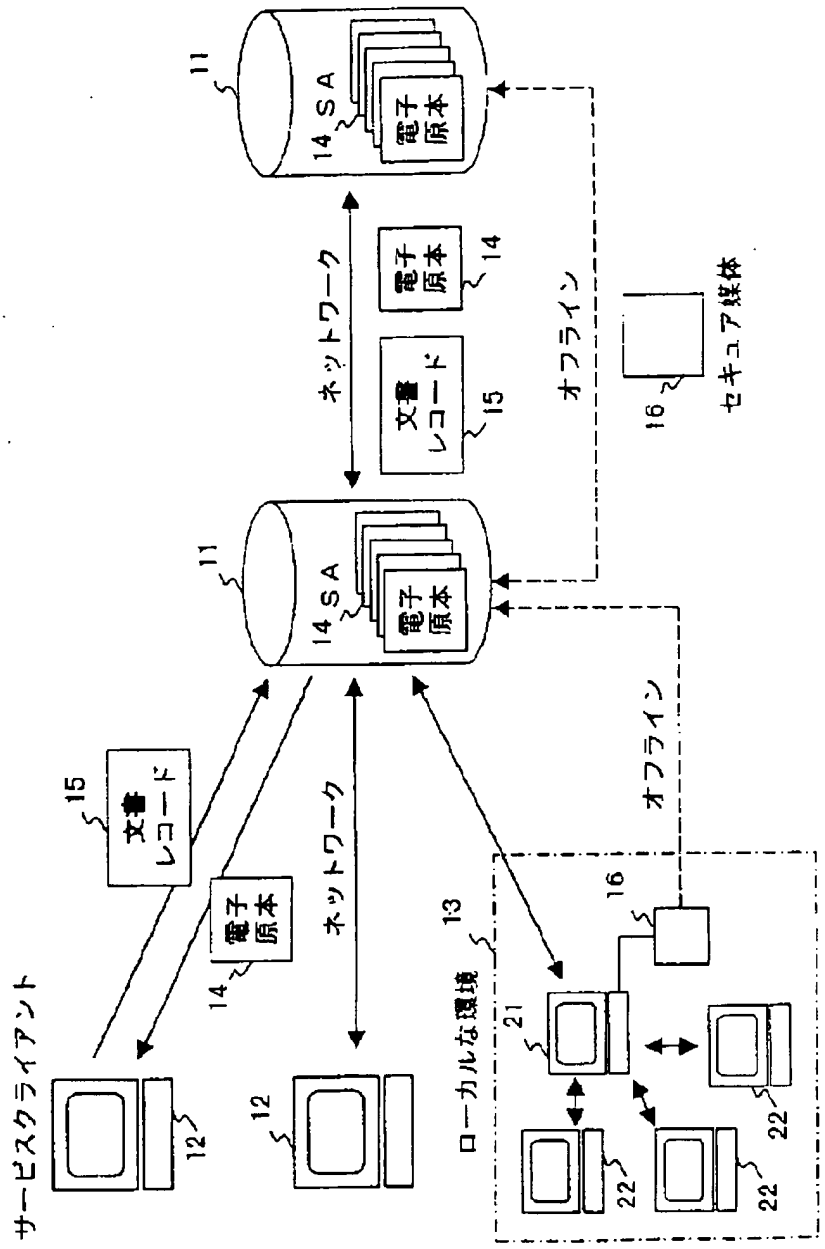
[Drawing 2]

電子原本モデルを示す図



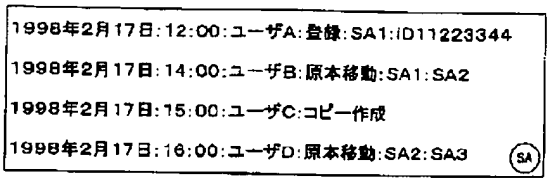
[Drawing 3]

電子原本管理システムの構成図



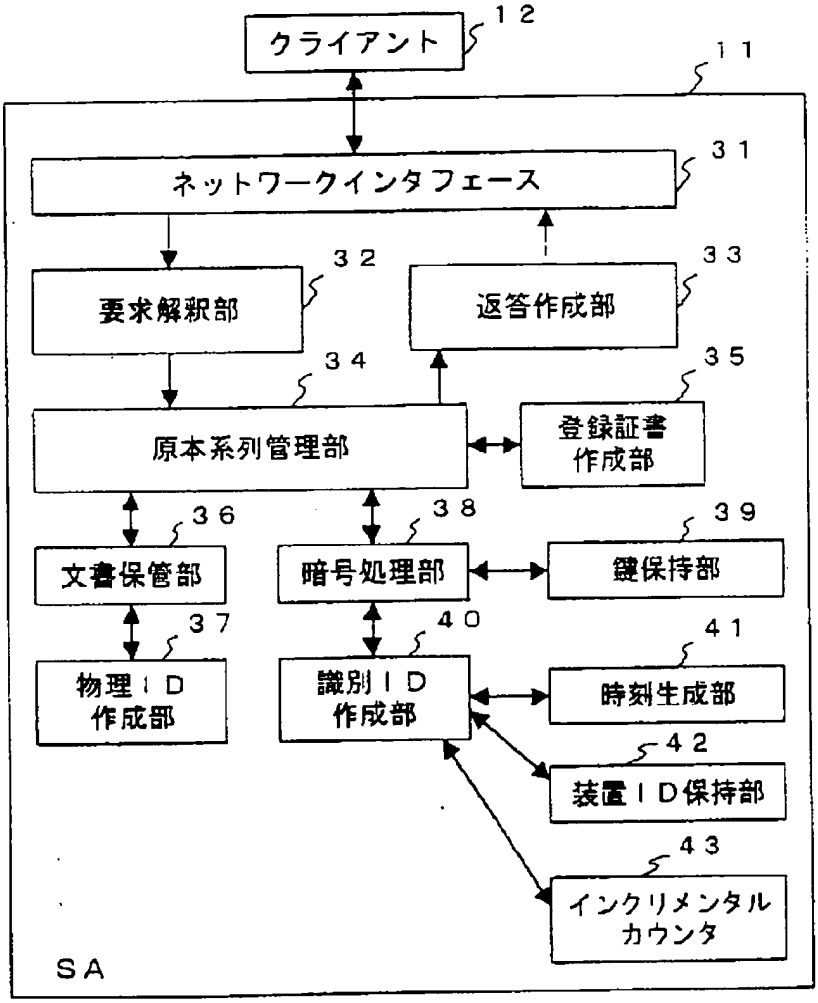
[Drawing 26]

状態遷移情報を示す図



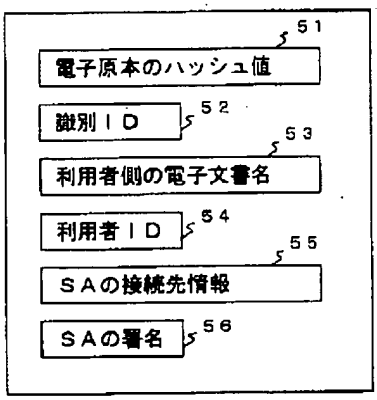
[Drawing 4]

セキュアアーカイバの構成図



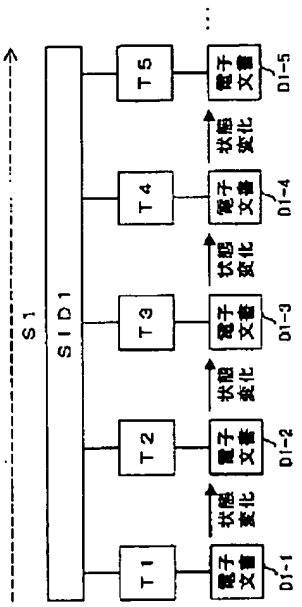
[Drawing 6]

文書レコードを示す図



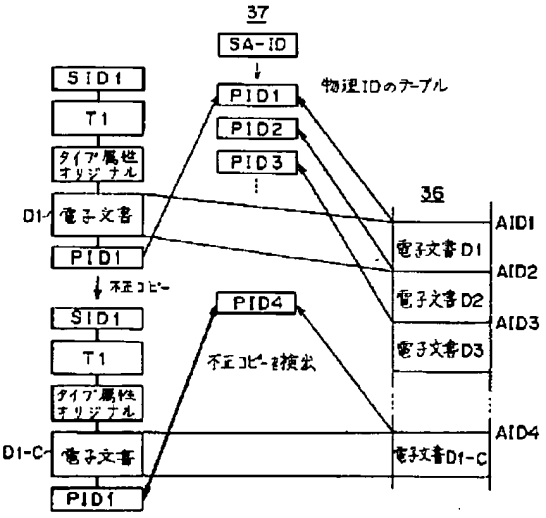
[Drawing 8]

時系列管理を示す図



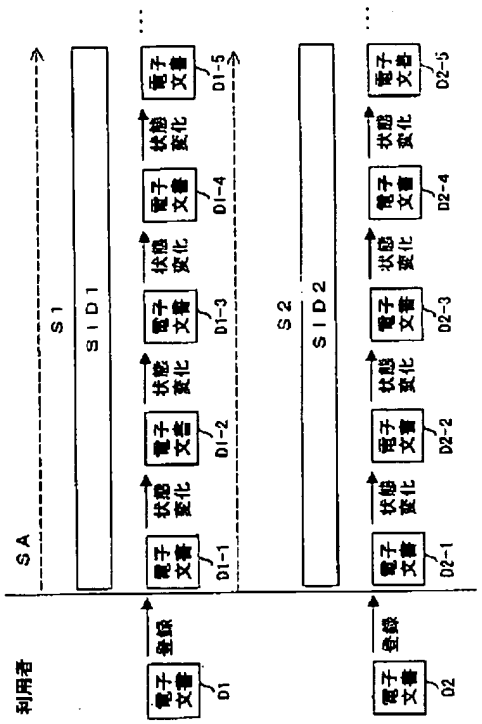
[Drawing 12]

不正コピーの検出を示す図



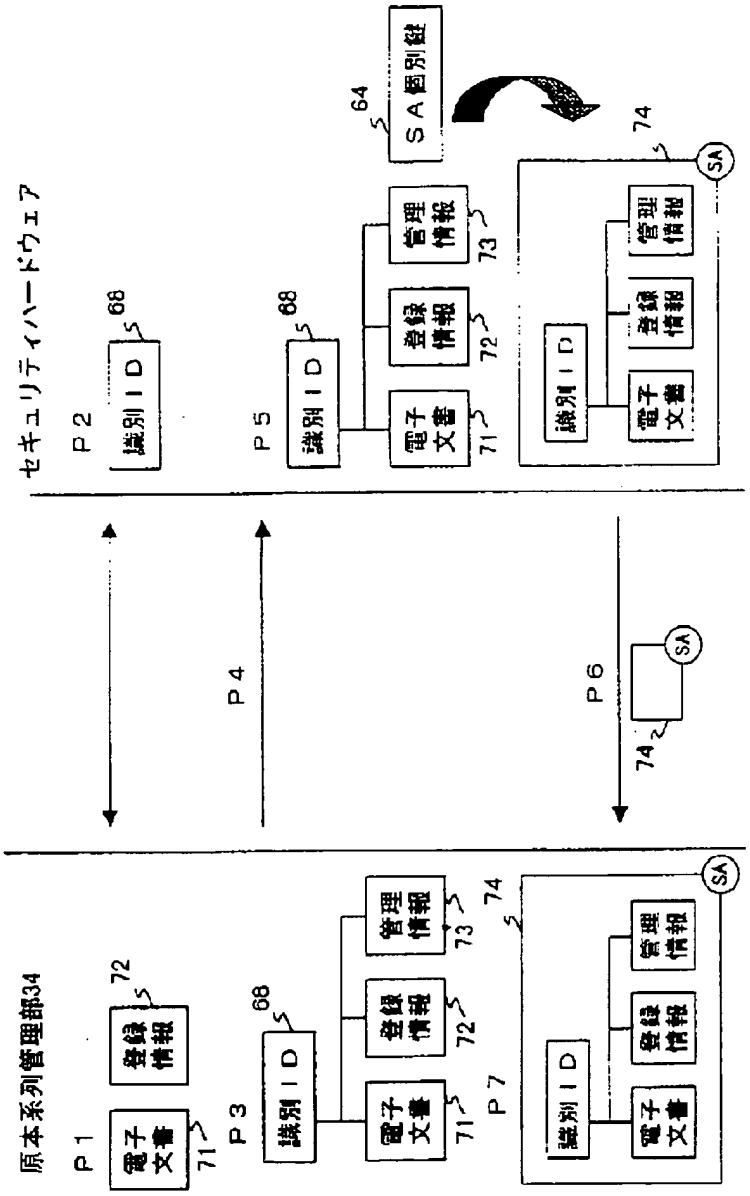
[Drawing 7]

原本系列の管理を示す図



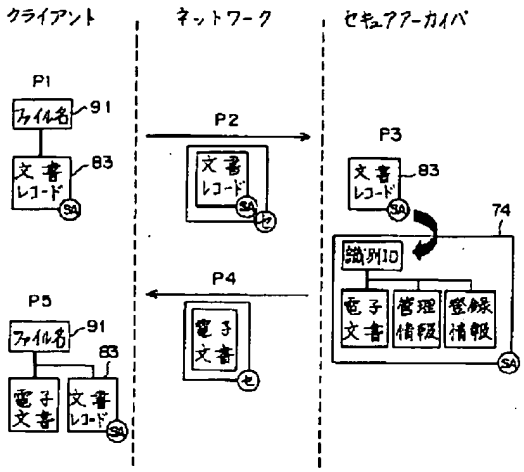
[Drawing 15]

電子文書の保管を示す図



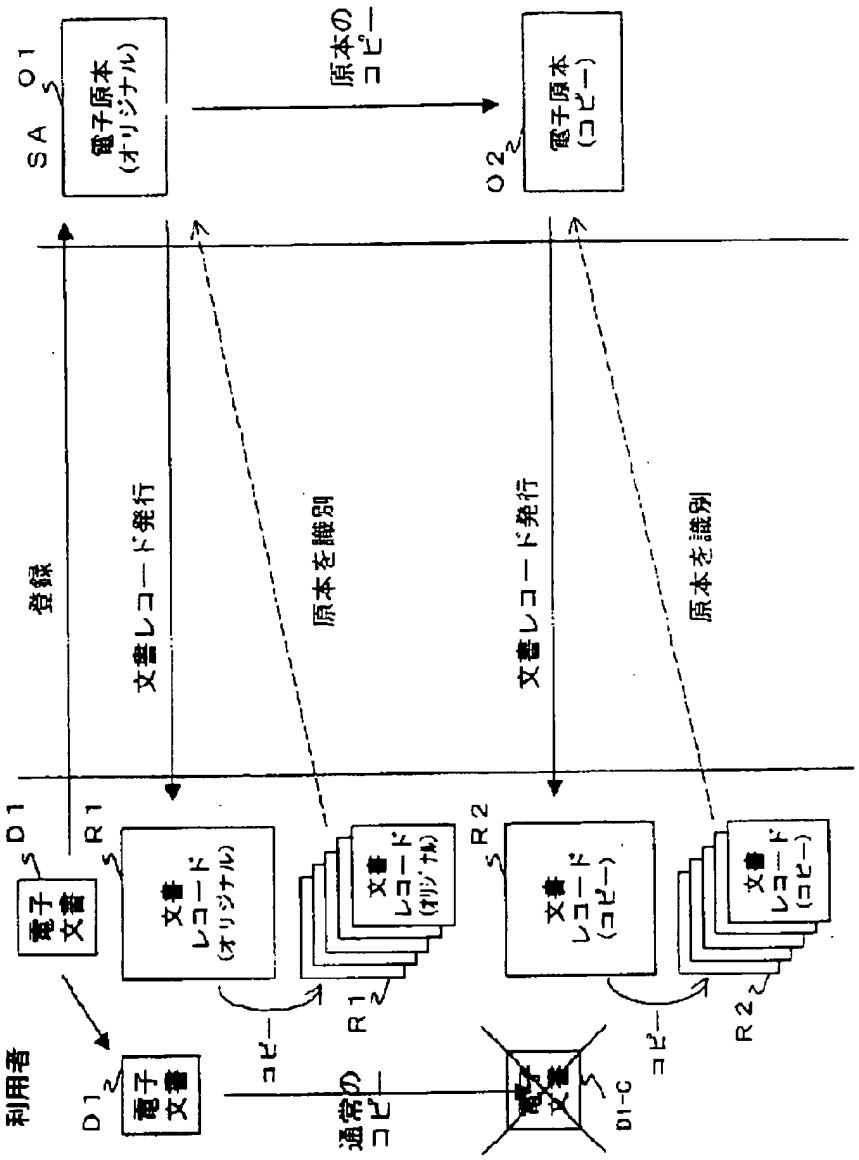
[Drawing 18]

検索処理を示す図



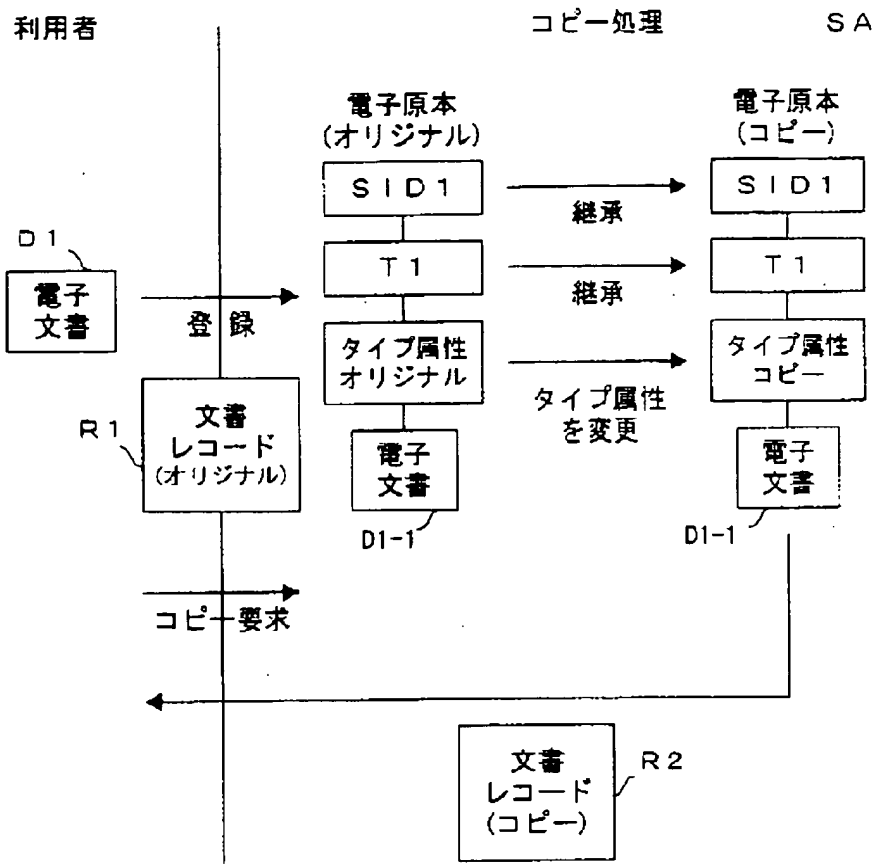
[Drawing 9]

オリジナルとコピーの識別を示す図



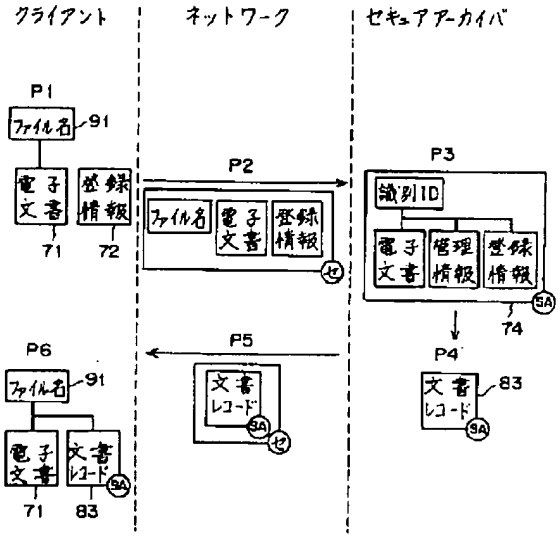
[Drawing 10]

タイプ属性による管理を示す図



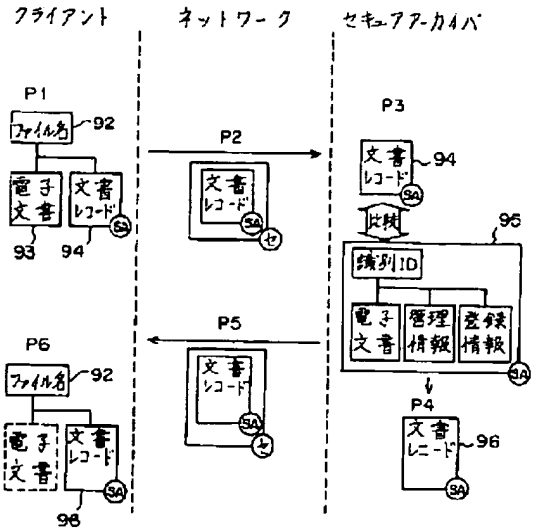
[Drawing 17]

登録処理を示す図



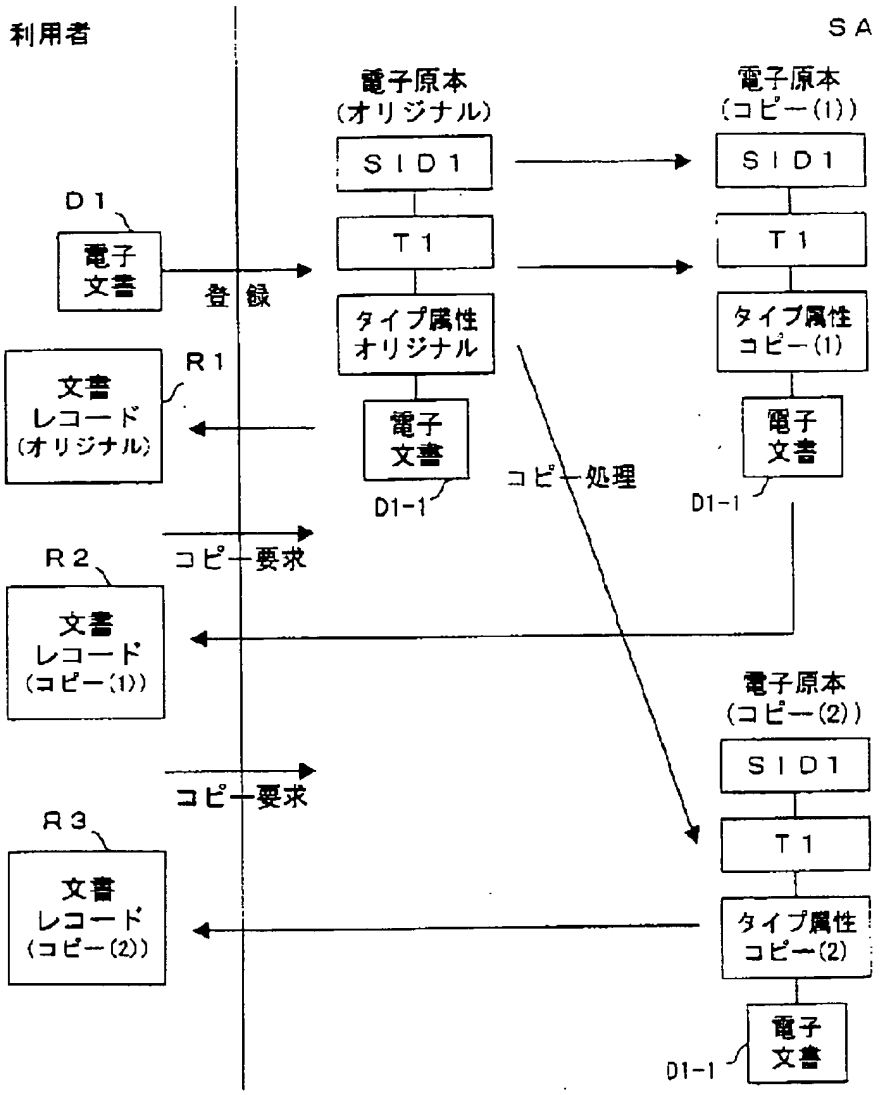
[Drawing 19]

文書レコード検証処理を示す図



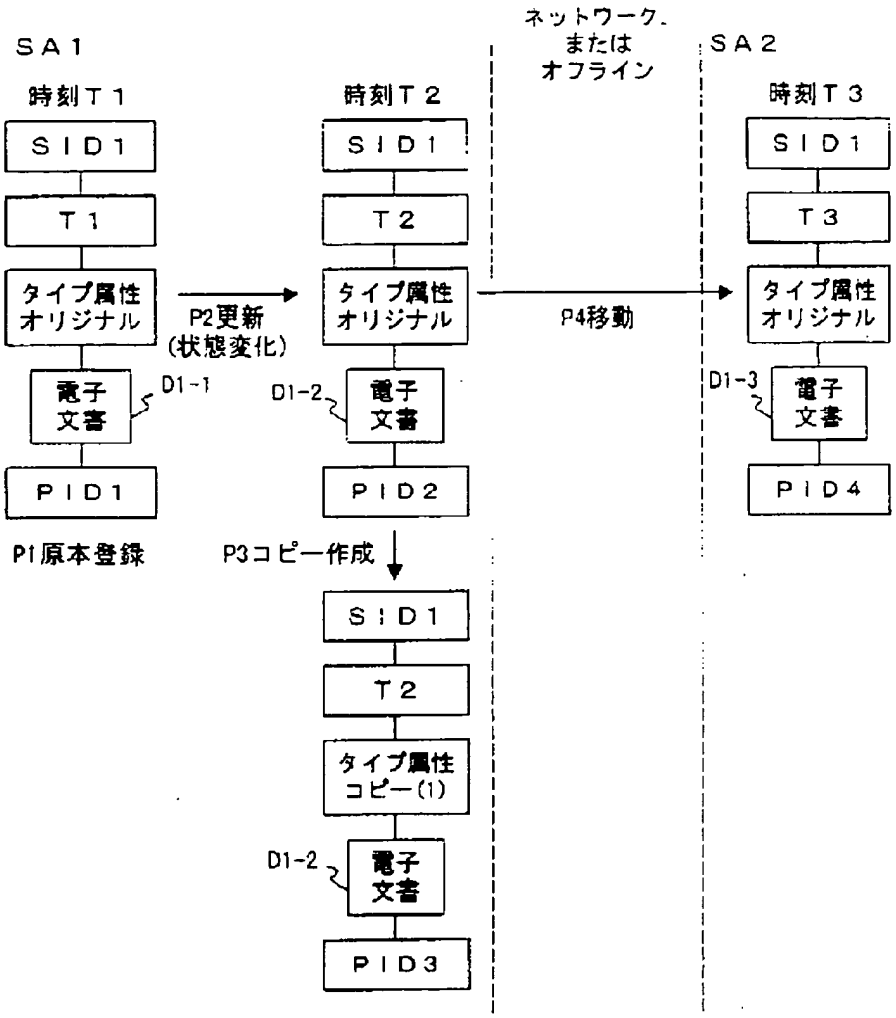
[Drawing 11]

複数コピーの管理を示す図



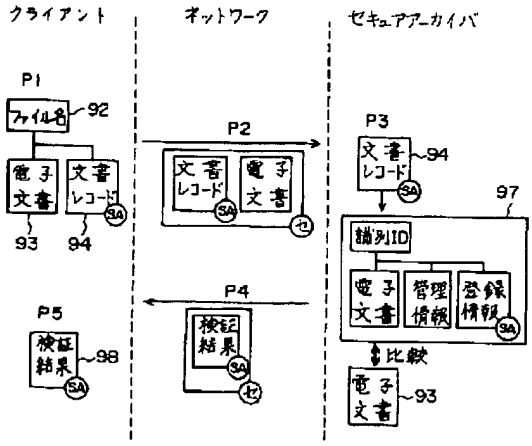
[Drawing 13]

識 別 情 報 の 変 化 を 示 す 図



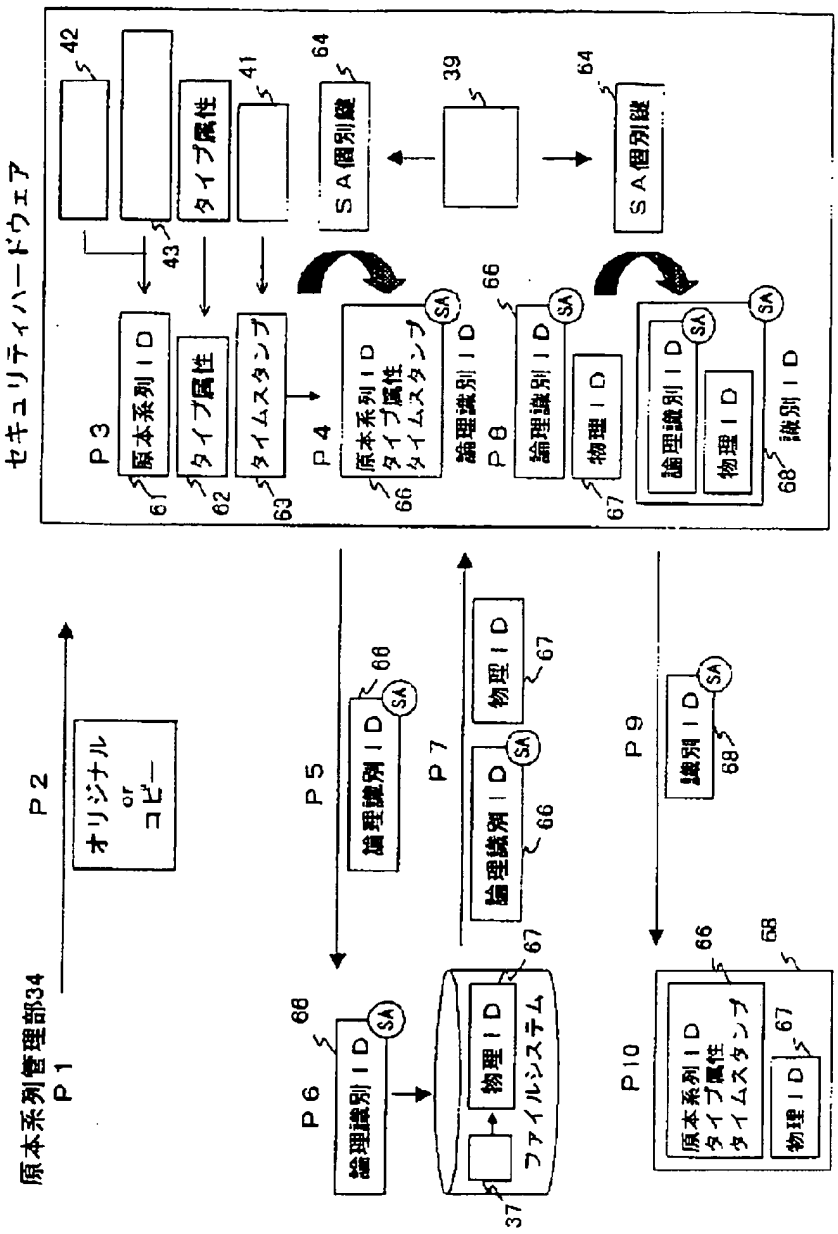
[Drawing 20]

同一性検証処理を示す図

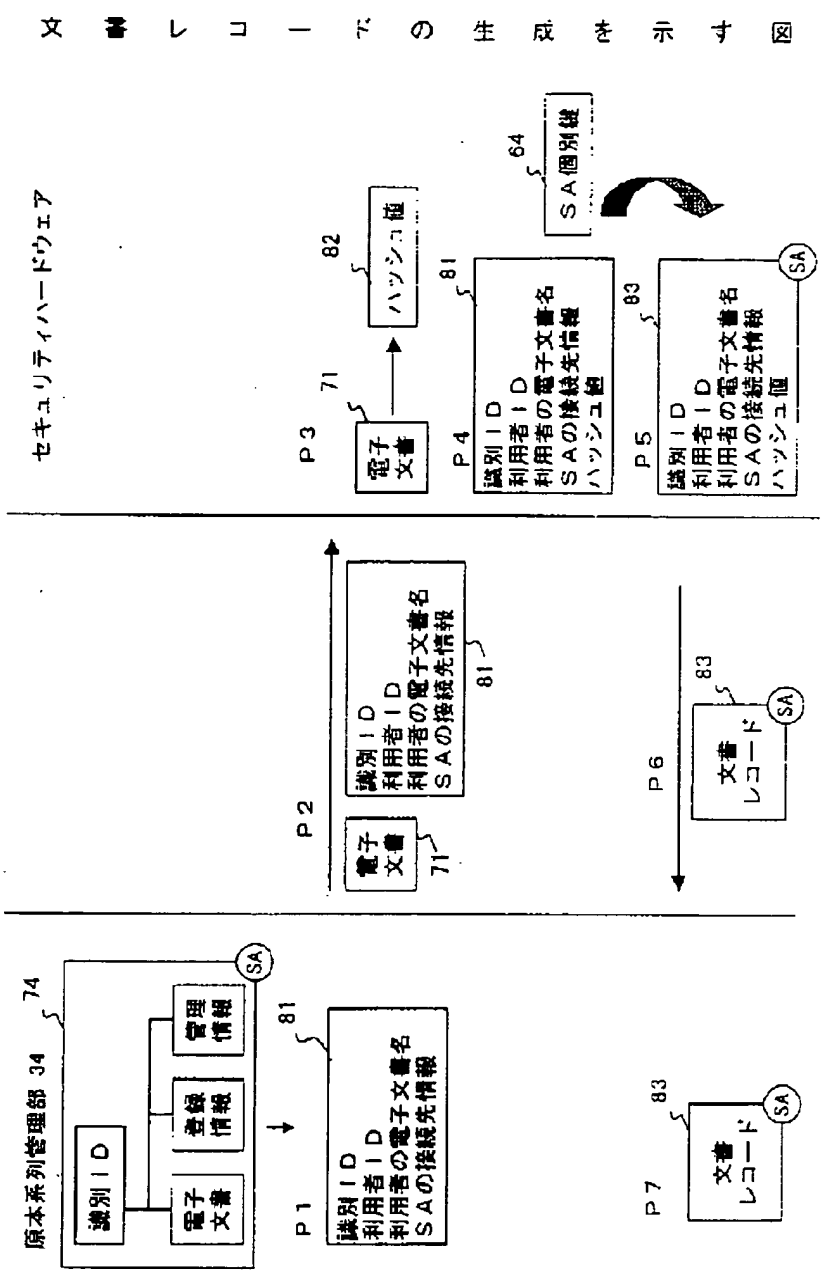


[Drawing 14]

識別ＩＤの生成を示す図

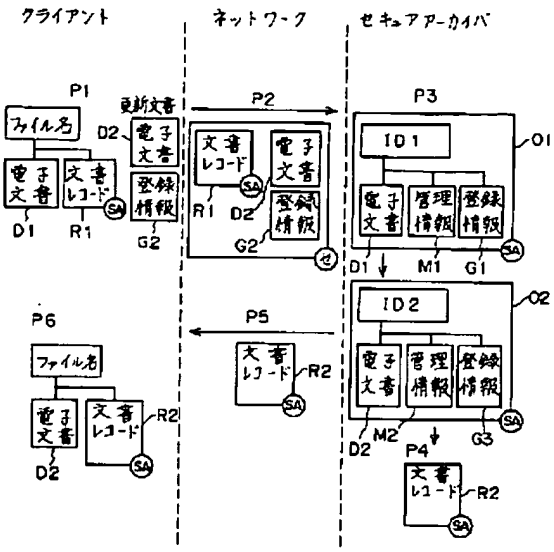


[Drawing 16]


文書レコードの生成を示す図
セキュリティハードウェア
P3
71
電子文書
82
ハッシュ値
64
SA個別鍵
P4
81
識別ID
利用者ID
利用者の電子文書名
SAの接続先情報
ハッシュ値
P5
83
識別ID
利用者ID
利用者の電子文書名
SAの接続先情報
ハッシュ値
SA
P2
電子文書
71
識別ID
利用者ID
利用者の電子文書名
SAの接続先情報
81
P6
文書レコード
83
SA
原本系列管理部 34
74
識別ID
電子文書
登録情報
管理情報
SA
P1
81
識別ID
利用者ID
利用者の電子文書名
SAの接続先情報
P7
83
文書レコード
SA

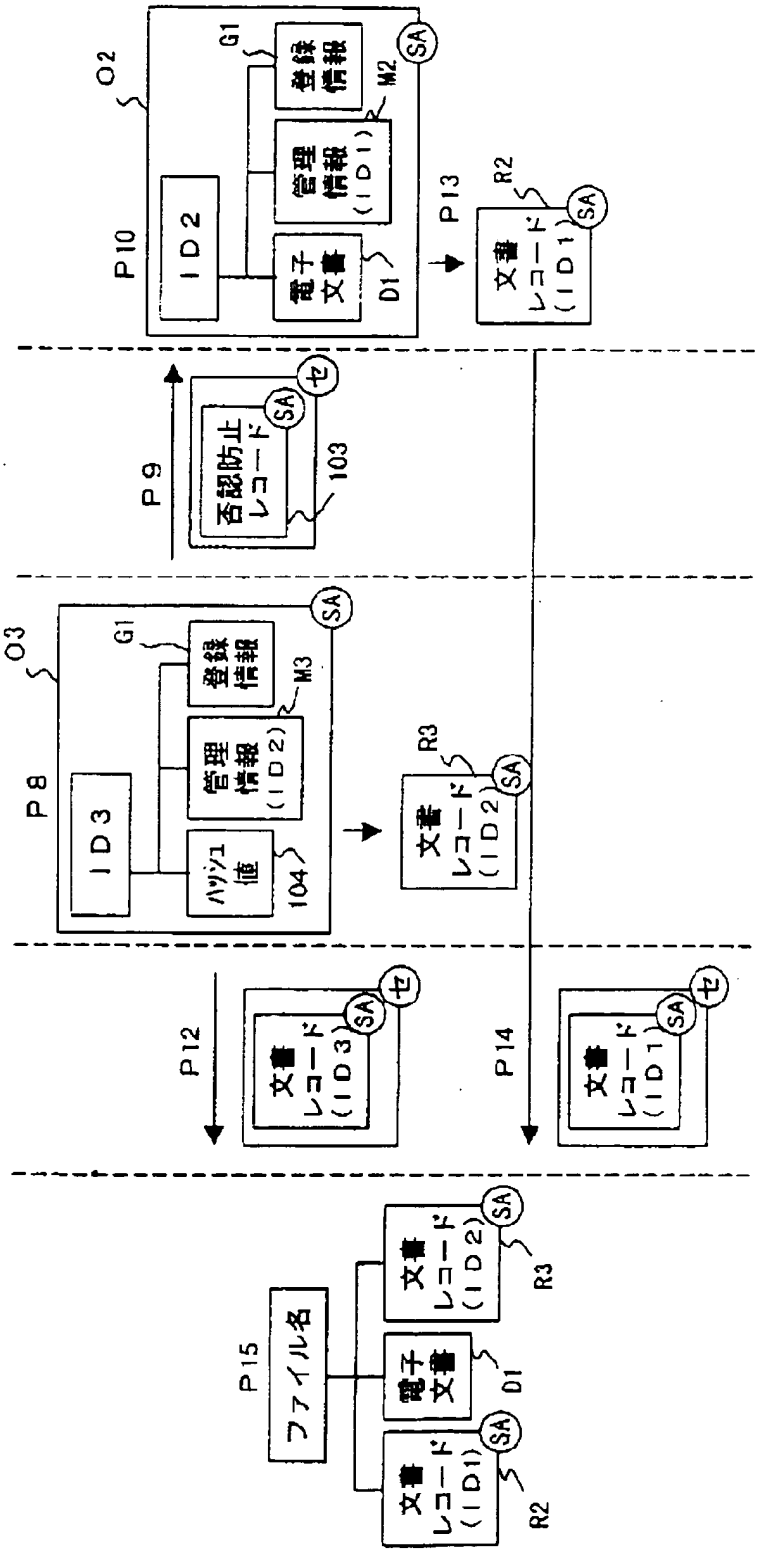
[Drawing 21]

更新処理を示す図



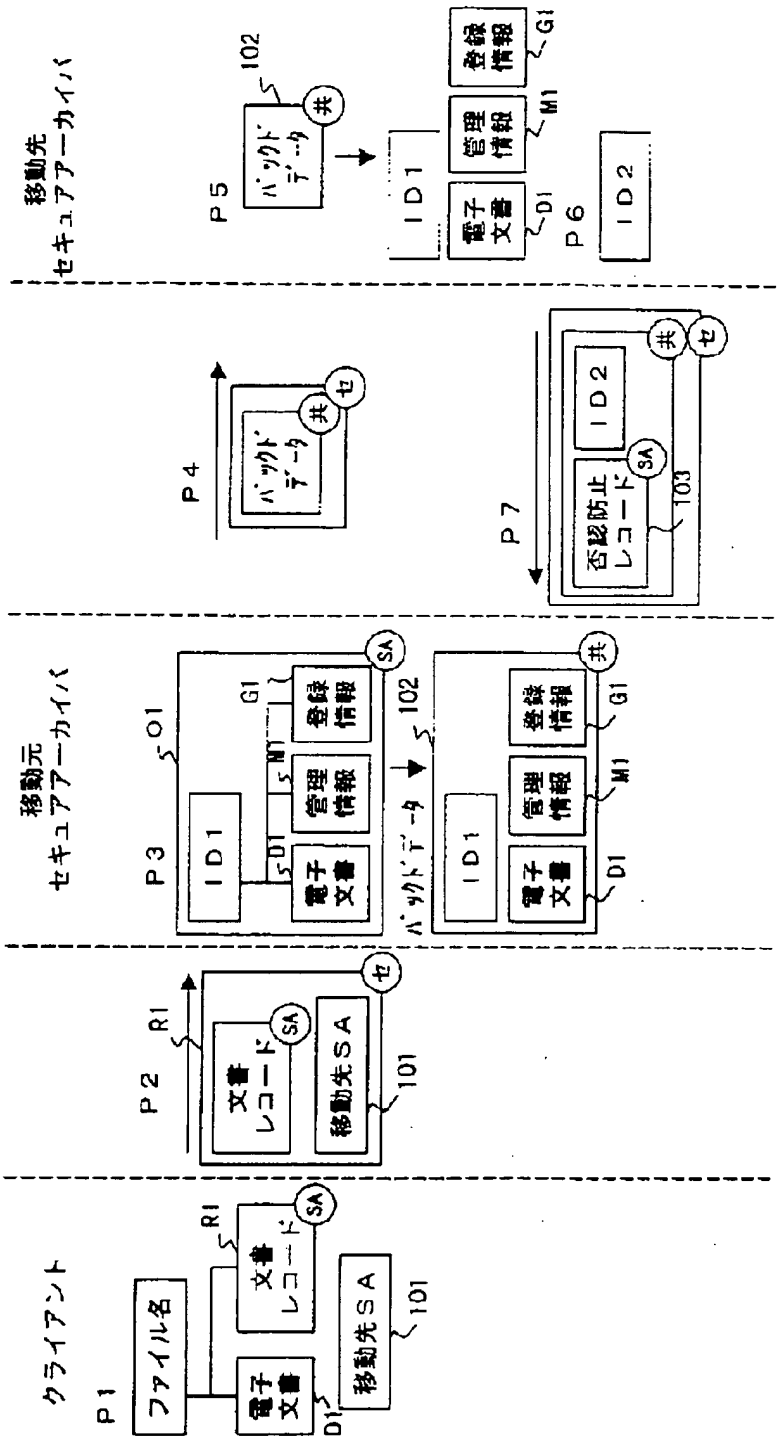
[Drawing 23]

移動処理を示す図（その２）



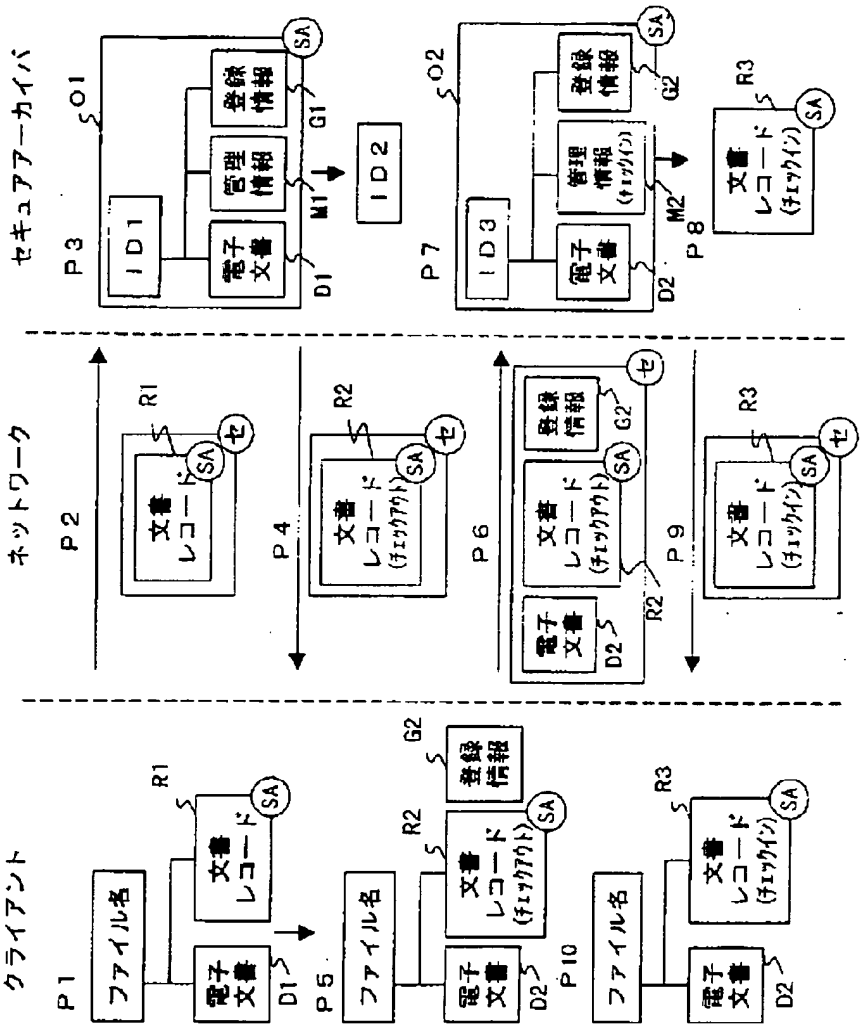
[Drawing 22]

移動処理を示す図（その１）



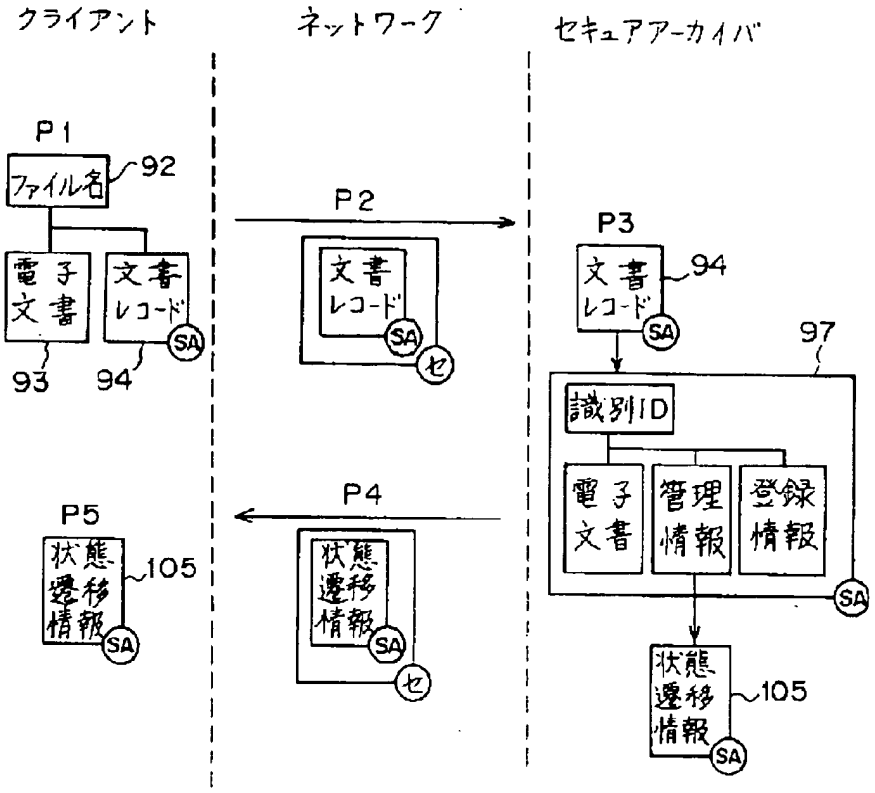
[Drawing 24]

チェックアウト・チェックイン処理を示す図



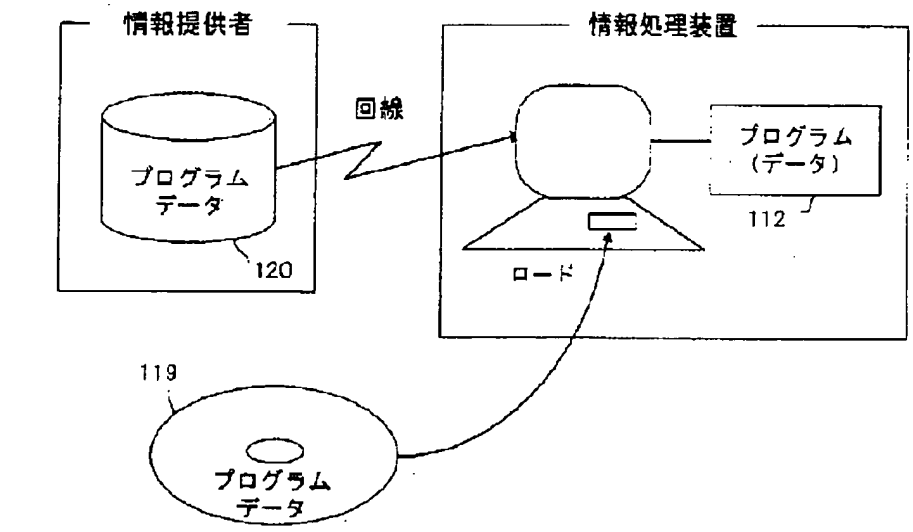
[Drawing 25]

状態遷移取得処理を示す図



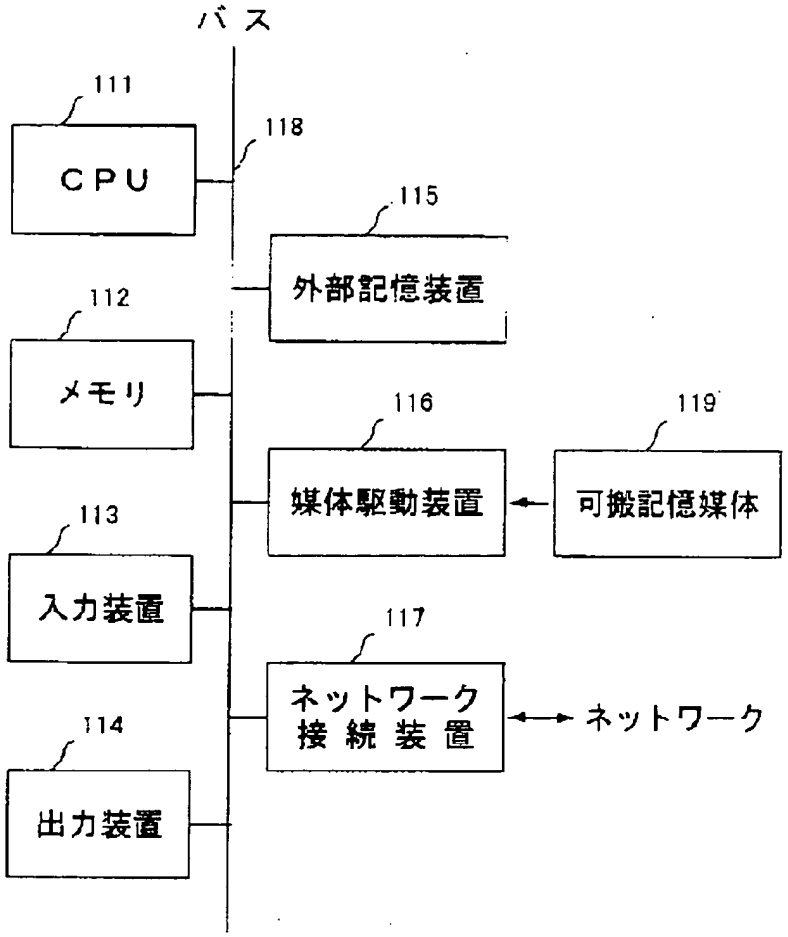
[Drawing 28]

記憶媒体を示す図



[Drawing 27]

情 報 処 理 装 置 の 構 成 図



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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the equipment and the approach of starting the electronization of a document and managing the original of the electronized important document.
[0002]
[Description of the Prior Art] Conventionally, the original of an important document is managed as a paper medium, and they filed, they arranged and have been managed. However, the electronization of various services of dealings between companies, electronic banking, etc. progresses, and the important document treated as a paper medium is recorded on electronic media by the spread of personal computers in recent years, and expansion of a network environment, and is processed by them. The documentation-management application which cooperated with the database appears, and a document is being managed using current and those applications as electronization progresses.
[0003]
[Problem(s) to be Solved by the Invention] However, there are the following problems in the conventional documentation-management application.
1. Since a document is managed by computer under management of a user, it can deceive about the date and time of creation of a document etc. easily.
2. Since a document is managed by computer under management of a user, a document can be deleted easily.
3. Since a document is managed by computer under management of a user, a document can be altered easily. Even if documentation-management application is recording the hysteresis of document actuation, the hysteresis

can also be altered easily.
4. If a document is copied, since the electronic filing document of the completely same contents will be made, it is not clear anymore which is the real original.
[0004] Thus, since there are various problems which are not in a paper medium in an electronic document, in the electronization of an important document, the limit on an aspect of practical use is imposed more than the paper medium. For this reason, in spite of carrying out electronic processing with much trouble, the present condition is outputting to a paper medium, performing contract and processing of order or keeping the document as a court document finally.
[0005] The technical problem of this invention is offering the equipment and the approach of managing the original of the electronized important document safely more.
[0006]
[Means for Solving the Problem] Drawing 1 is the principle Fig. of the electronic original management equipment of this invention. The electronic original management equipment of drawing 1 is equipped with the registration means 1, the grant means 2, a management tool 3, and the issue means 4.
[0007] In the 1st aspect of affairs of this invention, the registration means 1 registers electronic intelligence as original information, and the grant means 2 gives the logical identifier information which identifies electronic intelligence uniquely logically, and the whereabouts identification information showing the physical whereabouts of electronic intelligence to the electronic intelligence. A management tool 3 manages original information using the combination identification information based on the combination of logical identifier information and whereabouts identification information, and the issue means 4 publishes registration bond information that it is used for access to original information, including the combination identification information.
[0008] The electronic intelligence which the registration means 1 registers corresponds to the electronized important document, for example, and the registered electronic intelligence is saved in the registration means 1. Moreover, the physical whereabouts of electronic intelligence corresponds to the locations (address etc.) where electronic intelligence is saved for example, within the registration means 1. A management tool 3 generates combination identification information combining the logical identifier information and whereabouts identification information which were given by the grant means 2, and gives the combination identification information to original

information. And the issue means 4 generates the registration bond information containing the combination identification information, and publishes it to a registrant etc.

[0009] Registering electronic intelligence as original information, the grant means 2 gives the logical identifier information which identifies electronic intelligence uniquely logically, and the whereabouts identification information showing the physical whereabouts of electronic intelligence to the electronic intelligence. A management tool 3 manages original information using the combination identification information based on the combination of logical identifier information and whereabouts identification information, and the issue means 4 publishes registration bond information that it is used for access to original information, including the combination identification information.

[0010] Since according to such electronic original management equipment electronic intelligence is treated as original information only after it is registered, it can clarify that the copy of the electronic intelligence generated by the registrant side is not original information. Moreover, since a registrant and other users access original information using the published registration bond information, they can identify the registered original information uniquely. Therefore, the safety of original management improves.

[0011] Moreover, in the 2nd aspect of affairs of this invention, a management tool 3 generates a series of corresponding instances of original information according to a change [time series / electronic intelligence], and manages the instance of a series of as one original sequence. The grant means 2 gives original sequence identification information to an original sequence, and the issue means 4 publishes registration bond information that it is used for access to one instance in a series of instances, including the original sequence identification information.

[0012] The instance of original information is generated when the registered electronic intelligence changes with updating etc., and a management tool 3 manages a series of instances using the original sequence identification information given by the grant means 2. And the issue means 4 generates the registration bond information containing the original sequence identification information, and publishes it to a registrant etc.

[0013] According to such electronic original management equipment, the sequence of the electronic intelligence generated by updating etc. every moment can be treated as one group. Moreover, since a registrant and other users access each instance using the published registration bond information, they can identify the registered original sequence uniquely. Therefore, the

safety of original management improves.
[0014] For example, the registration means 1 of drawing 1 corresponds to the original sequence Management Department 34 of drawing 4 R> 4 and the document storage section 36 which are mentioned later, the grant means 2 of drawing 1 R> 1 corresponds to physical ID creation section 37 of drawing 4 , and the discernment ID creation section 40, the management tool 3 of drawing 1 corresponds to the original sequence Management Department 34 of drawing 4 , and the issue means 4 of drawing 1 corresponds to the original sequence Management Department 34 of drawing 4 , and the registration bond creation section 35.
[0015]
[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained to a detail, referring to a drawing. In this invention, electronic original management equipment is formed apart from the computing environment which provides a user with service. Moreover, the electronic filing document registered into electronic original management equipment is altogether treated as the electronic original irrespective of the attribute of the "original", "copy", etc. depending on application, and a registration bond is published to the electronic original. Treating all as the electronic original corresponds to the condition of having outputted the electronic filing document to paper, and the user of the electronic original accesses the electronic original henceforth using the published registration bond. For example, the following is registered as the electronic original.
1. Negotiable securities, health insurance card, bill, etc. By showing the original, a right and value can be shown or the original can be transferred.
2. Document generated by trade activity like receipt (court document). The original is kept and it can submit as a proof at the time of audit etc.
3. Document attached to contract like copy of a family register and register copy. A copy of a family register and register copy guarantee that it is the same as the contents registered into the original of a family register or a register, and are kept with a contract as the original which guarantees an identity at the time of a contract.
4. Contract etc. The 2 sections of originals of the contract of the same contents are created, and each person concerned who exchanged contracts keeps each original.
5. Will, contract, etc. The 3rd person, such as an attorney and a notary public office, is looked up to, the 3rd person keeps the original, and persons concerned keep the copy.

6. Document generated on general business like the minutes and plan. The original of these documents is kept and it shares by two or more persons concerned.
7. Document generated in government and municipal offices or local self-governing body. A storage engine and open level are set up and managed.
8. Document submitted as proof like research note or design specifications in case of patent dispute.
9. Image information which serves as proof of research like film which copied photograph of DNA (deoxyribonucleic acid) photographed with electron microscope, and situation of wind tunnel experiment.
[0016] Drawing 2 shows the electronic original model kept by electronic original management equipment in this operation gestalt. In drawing 2 , a secure archiver (Secure Archiver, SA) corresponds to electronic original management equipment, and performs the following processings.
P1: The electronic filing document processed and drawn up by computer by the side of a user serves as the electronic original only after it is registered into SA. Thus, even if the copy of an electronic filing document is performed by the user side and the completely same electronic filing document is drawn up by treating as the original only after registering an electronic filing document into SA, they can clarify that the electronic filing document in not the original but SA is the original.
P2:, next SA publish a registration bond to the registered electronic filing document (electronic original). Thus, SA publishes a registration bond and it becomes possible to identify the electronic original in SA uniquely because a user accesses the electronic original in SA using a registration bond.
Even if it carries out duplex registration of the electronic filing document of the same contents by the side of P3:, next a user at SA, within SA, it treats as the separate original. Thus, even if it printed the same contents by the paper medium by treating the electronic filing document registered into SA as the separate electronic original and was the same contents as having treated as a separate object physically was possible, it will become possible to identify that it is the original which became independent respectively electronically.
When updating is performed to P4:, next a certain electronic original, each electronic filing document at the time is held as an instance of the original. Moreover, a registration bond is published to each instance. Thus, by processing, a user becomes possible [taking out the instance at the time of there being a certain original using a registration bond].
P5 :P A series of instances held by 4 are treated as the one original. Thus, it

becomes possible to treat the original from which a condition changes by updating etc. as the one original by processing.
Only the copy from P6:, next the electronic original registered into SA is treated as a copy of the electronic original. Thus, it becomes possible to distinguish clearly the copy of the copy document generated in a user side, and the electronic original by processing.
Processing which distinguishes clearly copies of the electronic original at which time P7:, next the copy created from the original of the electronic original are is performed. Moreover, a registration bond is published to the copy of the electronic original. Thus, a user becomes [which time the copy of the electronic original is a copy at, and] possible [identifying clearly] by publishing the registration bond in which it was shown clearly the copy of the electronic original at which time it is.
It unites with an electronic filing document and the registration information specified from applications, such as the attribute of P8: next the original, or copy, and the management information which SAs, such as attributes, such as a copy and original, and the date and time of creation, manage uniquely are treated. Thus, application is unifying an electronic filing document, management information, and registration information independently, and even if a document moves, it will become possible to refer to the attribute of the electronic original at a migration place.
Alteration detection information (part with which it is expressed by SA surrounded with the circle) is created in the form which unified P9: next an electronic filing document, management information, and registration information. Thus, the adjustment of an electronic filing document, management information, and registration information is held by creating alteration detection information not only including an electronic filing document but management information and registration information.
[0017] Drawing 3 is the block diagram of the electronic original managerial system containing the secure archiver mentioned above. As for the system of drawing 3 , the electronic original 14 is exchanged between the service client 12 and SA11 and between two SAs11 including SA11, the service client (user terminal) 12, and the local environment 13. The document record 15 is equivalent to the registration bond of drawing 2 , and it is used in order to access to the electronic original 14 in SA11.
[0018] The service client 12 and SA11 are connected to the communication network, and the service client 12 accesses the electronic original 14 in SA11 using the document record 15 published from SA11 at the time of electronic

original registration. Moreover, in the case of network connection, in the exchange between SAs11, the electronic original 14 is exchanged like the service client 12 and the communication link between SAs11 using the document record 15. In the case of off-line, the electronic original 14 is exchanged using the secure medium 16.

[0019] The local environment 13 of a service client side is a system which guarantees safeties (original nature), such as the only nature of the electronic original, in its one post, office, etc. in a firm, and contains local SA21 and a user terminal 22. Original nature is guaranteed only within the local environment 13, and the electronic original managed in local SA21 is not linked with the electronic original in other SAs11. Between local SA21 and external SA11, the information on the electronic original can be exchanged through a communication network or the secure medium 16.

[0020] Drawing 4 is the block diagram of SA11 of drawing 3 . SA11 of drawing 4 is equipped with a network interface 31, the demand interpretation section 32, the answerback creation section 33, the original sequence Management Department 34, the registration bond creation section 35, the document storage section 36, physical ID creation section 37, the cipher-processing section 38, the key attaching part 39, the discernment ID creation section 40, the time-of-day generation section 41, the equipment ID attaching part 42, and the incremental counter 43.

[0021] Among these, the document storage section 36 and physical ID creation section 37 constitute a file system, and the cipher-processing section 38, the key attaching part 39, the discernment ID creation section 40, the time-of-day generation section 41, the equipment ID attaching part 42, and the incremental counter 43 are mounted as security hardware.

[0022] Drawing 5 is the flow chart of the processing which SA11 performs. One transaction of SA11 consists of processings within the equipment according to the demand reception from a client 12, and a demand, and answerback transmission to a client 12. First, a network interface 31 receives the demand from a client 12 (step ST 1), and the demand interpretation section 32 identifies the class of demand (step ST 2).

[0023] Next, the original sequence Management Department 34 performs processing according to each demand (step ST 3), and creates a processing result (step ST 4). And the answerback creation section 33 creates the answerback message to a client 12 (step ST 5), and a network interface 31 transmits an answerback message to a client 12 (step ST 6). Thereby, one transaction is completed.

[0024] For example, if the registration demand of a document comes from a client 12, the demand interpretation section 32 will interpret the class of demand as it being document registration, and will pass the original sequence Management Department 34 the document sent from the client 12.
[0025] Next, through the cipher-processing section 38, the original sequence Management Department 34 requests creation of a logical identifier ID from the discernment ID creation section 40, and stores a document in the document storage section 36. The discernment ID creation section 40 acquires a time stump from the time-of-day generation section 41, acquires the equipment ID of SA11 from the equipment ID attaching part 42, acquires the counter value showing the document ID in equipment from the incremental counter 43, and generates a logical identifier ID.
[0026] Moreover, using the equipment key (individual key of SA) currently held at the key attaching part 39, the cipher-processing section 38 gives a digital signature to a logical identifier ID, and passes the original sequence Management Department 34 a logical identifier ID. Moreover, physical ID creation section 37 creates the physics ID showing the physical whereabouts of a document, and passes it to the original sequence Management Department 34 through the document storage section 36.
[0027] The original sequence Management Department 34 connects Physics ID with a logical identifier ID, and hands the cipher-processing section 38. The cipher-processing section 38 performs signature processing using the equipment key currently held at the key attaching part 39, considers the generated digital data as Discernment ID, and returns it to the original sequence Management Department 34. The original sequence Management Department 34 manages the received discernment ID as identification information of the document by which the registration request was carried out.

[0028] Next, the original sequence Management Department 34 directs creation of a document record in the registration bond creation section 35, and the registration bond creation section 35 creates a document record, and it returns it to the original sequence Management Department 34. And the original sequence Management Department 34 creates a document record, delivery and the answerback creation section 33 create the answerback message to a client 12 in the answerback creation section 33, it sends to a client 12 through a network interface 31, and processing is ended. The same is said of the configuration of SA21 of drawing 3 .
[0029] Next, the processing which the system of drawing 3 performs is

explained more to a detail, referring to from drawing 6 to drawing 26 . As mentioned above, SA publishes a document record to a user as a registration bond at the time of registration of the electronic original. Using a document record, the electronic original in SA is accessed or a user sends a document record to the part-owners of the original. Part-owners can use the original by accessing SA using the sent document record. The requirements for a document record are as follows.

1. Prove the fact of electronic original registration.
2. Offer the information which shows to which original in SA it was published.
3. Offer the information which shows which electronic filing document of a user was registered as the original.
4. Offer an original registrant's (owner) information.
5. Offer the information on SA which should be accessed.
6. Detect the alteration of a document record.

[0030] From these requirements, SA embeds information as shown in drawing 6 into a document record, and publishes it. The hash value 41 of the electronic original is a value which compressed the contents of the original registered into SA by the Hash Function, and was acquired. By comparing with the hash value of the electronic filing document in which a user has this hash value 41, that electronic filing document can check that it is the document registered into SA to be sure. Therefore, a hash value 41 is used as information proving the fact of registration. Instead of a hash value 41, other results changed with the tropism function on the other hand may be used for the contents of the original.

[0031] Discernment ID 42 is the identification information for identifying the electronic original in SA uniquely, and is generated from a logical identifier ID and Physics ID. SA adds Discernment ID to a document record as information which shows to which electronic original the document record was published.

[0032] The electronic-filing-document name 53 by the side of a user corresponds to the file name managed by the user side, and is added as information which matches the electronic original in SA, and a user's electronic filing document. Moreover, a user ID 54 is identification information used for the authentication at the time of original registration, and is added to a document record as information of the registrant (owner) of the original.

[0033] The connection place information 55 on SA corresponds to IP (Internet

Protocol) address, FQDN (Fully Qualified Domain Name), etc. of SA, and is added to a document record as identification information of SA which should be accessed. Moreover, the signature 56 of SA is signature information which SA calculates and attaches to the information on a document record at the time of issue of a document record, and is also the guarantee information which shows what SA published the document record for. A user can transmit the document record with which the signature 56 was attached to SA, and can verify the existence of an alteration of an electronic filing document.

[0034] Next, management of an original sequence is explained. As for the original registered into SA, the condition changes with actuation of updating, migration, deletion, etc. SA holds the instance of the original at the time, whenever a condition changes, and it manages a series of instances as an original sequence. And the original sequence ID is given to the original sequence, and it identifies uniquely. Thereby, if it sees from a service client, it will become possible to specify the sequence as the one original and to take it out.

[0035] Drawing 7 shows signs that an original sequence is uniquely identified according to the original sequence ID. If an electronic filing document D1 is registered into SA as an electronic filing document D 1-1, SA will give SID1 to an electronic filing document D 1-1 as an original sequence ID, and will manage it as an original sequence S1.

[0036] Then, if correction etc. is made on an electronic filing document D1, the condition of the original changes and re-registration is performed, SA will generate the instance of the electronic filing document D 1-2 which makes SID1 the original sequence ID, and will hold it. Henceforth, whenever a change of state happens, an instance like the electronic filing documents [D / D, D / 1-4 /, and / 1-5] 1-3 is held, and a series of instances are identified by SID1.

[0037] Moreover, SID2 is newly given to the electronic filing document D2 registered apart from the electronic filing document D1 as an original sequence ID. And a series of instances [D / D, D / 2-2 /, and / 2-3] 2-1 of an electronic filing document D2, D 2-4, and D2-5 grade are identified by SID2, and are managed as an original sequence S2. even when the contents of the electronic filing document D2 are completely the same as the contents of the electronic filing document D1 at this time, SA manages each as another electronic original.

[0038] If such an original sequence ID is used, it is possible to identify a series of instances generated by the change of state as the one original.

However, to perform audit of a court document etc., it is necessary to specify and take out the instance at the time of the arbitration in a certain original sequence. Therefore, SA gives a time stump to each [of an original sequence] instance at the time.

[0039] Drawing 8 shows signs that the instance which changes to time series is managed with the time stump in a certain original sequence. If an electronic filing document D1 is registered as an electronic filing document D 1-1, the time stump T1 at the registration time is given, and whenever it is a change of state henceforth, a time stump T2, T3, T four, and T5 grade will be given to each instance. A user becomes possible [specifying and taking out the instance at the time of the arbitration of the electronic original] by specifying the original sequence ID and a time stump.

[0040] Next, in order to clarify the original of the electronic original, and the requirements for management of a copy, the problem of the copy of an electronic filing document is clarified first. Since the completely same electronic filing document as original will exist when an electronic filing document is copied, a copy overflows and which being the real original and discernment become impossible. For this reason, the copy was managed by the employment approaches, such as sticking a label on a medium conventionally.

[0041] Moreover, even if an electronic filing document is copied unjustly, it is impossible to identify to have been copied in a copied material, and it is possible to treat a copy as an original electronic filing document at a copy place. In addition, in the case of a paper medium, original and a copy are discriminable from the texture.

[0042] Moreover, in the case of a paper medium, if two or more copies are created, it is possible to identify each copy physically. However, since it exists as a copy of the completely same contents as original in the case of an electronic filing document, it is [**] also undistinguishable in it being original to identify each copy.

[0043] From these things, the following requirements are required of the original of the electronic original, and management of a copy.

1. Provide a user with the means which points to the original and the copy of the electronic original uniquely. A user is provided with the information which discriminates a copy from original, and it is made identifiable whether a copy is a copy from the original of which electronic original.
2. Even if it carries out a multiple-times copy, it is uniquely identifiable in each copy.

[0044] In order to satisfy these requirements, SA manages the following original and a copy.
1. Register an electronic filing document into the meaning discernment SA of the original of the electronic original, and a copy by the document record, and the electronic filing document in SA to which the document record published at the time of registration points is the original, and manage so that the copy of the electronic original to the original may be generated. Moreover, a document record is published also to a copy generate time, and only the electronic filing document in SA to which the document record points is treated as a copy of the original.
[0045] Even if it copies a document record by the user side by managing as that whose electronic filing document to which a document record points is the electronic original or its copy, the document record will become possible [identifying the original in SA uniquely]. Therefore, problems, such as a problem that it is not known which is the original, and a flood of a copy, are solvable.
2. Give the attribute (type attribute) which discriminates a copy from original to the electronic original registered into the management SA by the type attribute. Moreover, in the case of copy generation of the original, the electronic filing document which inherits the original sequence ID and a time stump is generated, a copy is given as a type attribute, and this electronic filing document is considered as the copy of the original at it. Thus, the copy of the generated electronic original shows clearly whether it is the copy generated from the instance of which electronic original. A type attribute is added to a document record, a user is notified of it, and a user identifies the original and the copy of the electronic original by referring to a document record.
[0046] Moreover, even if it gave the type attribute which contains in the copy of the electronic original **** which shows a what time copy it is and carried out the multiple-times copy, each copy is made identifiable as an independent document. This **** is added to a document record, and a user is notified of it, and it identifies a user as what became independent about the copy of each electronic original, respectively. In this way, two or more copies are managed with the type attribute containing ****.
[0047] Drawing 9 shows signs that the original and the copy of the electronic original are uniquely identified using a document record. If an electronic filing document D1 is registered into SA as the electronic original, it will be held in SA as the electronic original O1 (original). And the document record R1

(original) is published to the electronic original.
[0048] This document record R1 identifies the electronic original O1 in SA uniquely. Moreover, even if this document record R1 is copied with a user's personal computer etc., since the copy of the document record R1 is pointing to the electronic original O1 in SA uniquely, which does not produce the problem that it is not clear anymore whether it is the real original.
[0049] Next, if the electronic original O2 (copy) which is the copy of the original is generated to the electronic original O1, the document record R2 will be published like the electronic original O1 also to the electronic original O2. Even if this document record R2 is copied, the copy of the document record R2 can identify the electronic original O2 in SA uniquely.
[0050] In addition, the copy of the electronic filing document D1 by the side of a user is the usual copy actuation, and electronic-filing-document D1-C of a copy place does not have the effect as the original. It is because the electronic filing document in SA to which the document record R1 points to only is managed as the original to the last in a user's system.
[0051] According to the original of such the electronic original, and management of a copy, even if the electronic original in SA is unjustly updated with sufficient convenience, a user's system can take out the effective instance as the newest condition and the newest original of the original within SA with a document record. Therefore, the safety that a 1 consciousness exception is possible is given to the original and the copy of the electronic original.
[0052] Drawing 10 shows signs that a type attribute is assigned to an electronic filing document. In case an electronic filing document D1 is registered into SA as the original, while SID1 is given as an original sequence ID and T1 is given as a time stump, original is given as a type attribute and it is registered as the electronic original (original). Original is altogether set to the electronic filing document which a user registers into SA as initial value of a type attribute. At the time of this registration, SA publishes the document record R1 (original) of the electronic original to a user.
[0053] And if a user demands copy generation of the electronic original of SA, SA will inherit the original sequence ID and time stump of the electronic original, and will newly generate the electronic original (copy) which changed the type attribute into the copy. The original sequence ID and a time stump are inherited for identifying clearly the copy of the instance at which time it is. And SA publishes the document record R2 (copy) to a user like the case of the electronic original (original).

[0054] Drawing 11 manages independently each of the copy of the original existing [two or more] by **** given to a type attribute, and shows signs that a user identifies them uniquely. If a user demands copy generation of the electronic original (original), SA will generate the electronic original (copy (1)) by the same processing as drawing 9 . **** (1) is given to the copy of a type attribute at this time.
[0055] If a user demands copy generation of the electronic original again, the electronic original (copy (2)) will be generated and **** (2) will be given to the copy of a type attribute. Moreover, the document records R2 and R3 are published by the user to the copy (1) of the electronic original, and a copy (2), respectively. Thus, it becomes possible by giving **** to the copy of a type attribute to manage the copy of each electronic original independently within SA. Moreover, a user becomes possible [identifying the copy of each electronic original uniquely] using a document record.
[0056] Next, management of the physical whereabouts of a document is explained. Since a paper medium disappears moving from the original location, it is possible to recognize where the original is physically. However, even if it managed the whereabouts of the original by the original management data set etc., the location (whereabouts) which should have the original was not able to be guaranteed. It has the following problems like [an electronic filing document] the paper medium.
1. The whereabouts of an electronic filing document cannot be specified as a meaning.
2. Since a copy and migration are able to carry out simply, an illegal copy and a theft are undetectable.
[0057] Then, SA performs the following processings to the electronic original, and guarantees the whereabouts of the electronic original.
1. Give the information (physics ID) which specifies the whereabouts physically to the electronic original registered into SA, and specify the whereabouts as it at a meaning.
2. Detect an illegal copy using Physics ID.
[0058] In the environment where a network and off-line system are intermingled, it is expected that two or more SAs manage the electronic original. Then, it constitutes from the address ID which shows in which location of which medium in SA-ID which specifies SA, and SA Physics ID is kept. As the address ID, the physical address on a medium is used, for example.
[0059] Drawing 12 specifies the whereabouts of the electronic original by

Physics ID, and shows signs that an illegal copy is detected. PID1 which is the physics ID of an electronic filing document D1 consists of the addresses ID of SA-ID and the document storage section 36 (AID1), and the physics ID is added to the electronic filing document D1. An electronic filing document D2 and an electronic filing document D3 are the electronic originals currently normally kept considering AID2 and AID3 as the address ID, respectively.
[0060] The table of Physics ID is held at physical ID creation section 37 of drawing 4 , and stores the correspondence relation of the physics ID generated from each electronic filing document and its address ID. The physics ID of electronic filing documents D1, D2, and D3 is PID1, PID2, and PID3, respectively.
[0061] Here, if a manager etc. copies an electronic filing document D1 unjustly, electronic-filing-document D1-C of a copy will be kept in the location which makes AID4 Address ID. In this case, the physics ID which electronic-filing-document D1-C has is PID1, and the physics ID registered into the table of Physics ID is SA-ID and PID4 which consists of AID4. Therefore, if both physics ID is compared, it will turn out that they differ and an illegal copy will be detected. In addition, since SA-ID differs when copied illegally to another SA, an illegal copy is detected similarly.
[0062] Next, drawing 13 shows the example of change of the various identification information in an original sequence. In drawing 13 , identification information is changed in the following procedures.
P1: In the registration time of day T1, a user registers an electronic filing document D 1-1 into SA1. SA1 assigns [1st] SID1 as an original sequence ID as processing of registration. The sequence from which the condition of the original changes with these original sequences ID is identified by the meaning. T1 is assigned [2nd] as a time stump. With this time stump, each [in an original sequence] instance at the time is identified by the meaning. Original is set as the 3rd as a type attribute. All the type attributes of the electronic filing document registered into SA are original.
[0063] And SA1 identifies each original in a time uniquely logically with such identification information ID, i.e., an original sequence, a time stump, and a type attribute. Moreover, PID1 is assigned to the 4th as physics ID. The whereabouts of an electronic filing document is clarified by this physics ID, and detection of an illegal copy etc. is performed.
P2: Updating (change of state)
In time of day T2, a user updates an electronic filing document D 1-1, and generates an electronic filing document D 1-2. Thereby, the condition of the

original changes. At this time, the original sequence ID and a type attribute are not changed, but the electronic original with which T2 and PID2 were assigned is created as a new time stump and physics ID, respectively.
P3: A copy creation user creates the copy of an electronic filing document D 1-2. At this time, the original sequence ID and a time stump are not changed, but the electronic original with which a copy (1) and PID3 were assigned is created as a new type attribute and physics ID, respectively. A time stump is not changed for identifying clearly that it is a copy at the time of there being an original sequence. The time of day which created the copy is held as management information, such as hysteresis. Moreover, **** is shaken at a copy attribute and the instance of each copy is managed.
P4: In migration time-of-day T3, a user moves an electronic filing document D 1-2 to SA2 from SA1. At this time, the original sequence ID and a type attribute are not changed, but the electronic original with which T3 and PID4 were assigned is created as a new time stump and physics ID, respectively. Since ID which identifies SA uniquely is contained in Physics ID, migration of an unjust electronic filing document is detectable using this.
[0064] Next, the processing performed within SA is explained more to a detail. Drawing 14 shows the situation of generation of Discernment ID. Here, processing is performed by the following procedures.
P1: If the registration demand of a logical identifier ID creation demand electronic filing document is received, the original sequence Management Department 34 will give a logical identifier ID creation demand to security hardware.
P2: The original sequence Management Department 34 gives the type attribute which specifies the demand to the original original, and the demand to the copy original to a demand demand to security hardware. Moreover, in the case of the copy original, the logical identifier ID of the original original of a copied material is given.
P3: Logical identifier ID generation security hardware contains the cipher-processing section 38 of drawing 4 , the key attaching part 39, the discernment ID creation section 40, the time-of-day generation section 41, the equipment ID attaching part 42, and the incremental counter 43.
[0065] The discernment ID creation section 40 generates the original sequence ID 61 from the counter value which the equipment ID which the equipment ID attaching part 42 holds, and the incrementer counter 43 hold, and generates a time stump 63 from the time of day which the real time clock (RTC) in the time-of-day generation section 41 outputs. And it connects with the type

attribute 62 as which the original sequence Management Department 34 specified such information, and a logical identifier ID is generated. In the case of the copy original, the original sequence ID and time stump which are contained in the logical identifier ID of the given original original are inherited, and a logical identifier ID is generated in it.
P4: The signature cipher-processing section 38 of SA generates the digital signature of SA to the information connected by P3 using the individual key 64 of SA currently held at the key attaching part 39. The digital signature of SA corresponds to MAC (Message Authentication Code) created with the individual key 64 of SA. The cipher-processing section 38 connects the value of this MAC with the information connected by P3, and generates the final logical identifier ID 66 which identifies an electronic filing document logically. In drawing 14 , SA surrounded with the circle means that the generated information contains the digital signature of SA.
P5: The logical identifier ID answerback cipher-processing section 38 returns a logical identifier ID 66 to the original sequence Management Department 34 as a processing result of the security hardware to a logical identifier ID creation demand.
P6: An electronic-filing-document storage file system contains the document storage section 36 and physical ID creation section 37. The original sequence Management Department 34 stores an electronic filing document in the document storage section 36 in a file system by making the returned logical identifier ID 66 into a file name.
P7: The discernment ID creation demand original sequence Management Department 34 gives a discernment ID creation demand to security hardware. At this time, physics ID 67 is acquired from physical ID creation section 37, and a logical identifier ID 66 and physics ID 67 are given to security hardware.
P8: The signature cipher-processing section 38 of SA generates the signature of SA to the information which connected physics ID 67 with the logical identifier ID 66 using the individual key 64 of SA. And P9 which connects the signature of SA with the information which connected physics ID 67 with the logical identifier ID 66, and generates discernment ID 68: The discernment ID answerback cipher-processing section 38 returns discernment ID 68 as a processing result of the security hardware to a discernment ID creation demand.
P10: Store the storing discernment ID 68 in management information for Discernment ID as management information of the electronic original.

[0066] Drawing 15 shows signs that an electronic filing document is kept within SA. Here, processing is performed by the following procedures.
P1: The original sequence Management Department 34 acquires an electronic filing document 71 and the registration information 72 from a client, and directs generation of Discernment ID to security hardware. The electronic-filing-document name of User ID and a user is included in the registration information 72.
P2: Security hardware generates discernment ID 68 and returns it to the original sequence Management Department 34.
P3: The original sequence Management Department 34 relates an electronic filing document 71, the registration information 72, and management information 73 with discernment ID 68, and connects such information. The connection place information on SA is included in management information 73.
P4: The original sequence Management Department 34 directs generation of alteration detection information to security hardware. At this time, an electronic filing document 71, the registration information 72, and the information that connected management information 73 are given to security hardware.
P5: Security hardware generates the signature of SA to the received information using the individual key 64 of SA. And it adds to management information by making it into alteration detection information, and the electronic original 74 is generated.
P6: Security hardware returns the electronic original 74 as a processing result.
P7: The original sequence Management Department 34 registers the electronic original 74 into a file system as the original being original.
[0067] Drawing 16 shows the situation of document record generation. Here, processing is performed by the following procedures.
P1: The document record information plastic surgery original sequence Management Department 34 hands the information which acquired the connection place information on Discernment ID and SA, and acquired and acquired the electronic-filing-document name of User ID and a user from the registration information on the electronic original 74 to the registration bond creation section 35 of drawing 4 from the management information of the electronic original 74. The registration bond creation section 35 operates the received information orthopedically as document record information 81, and returns it to the original sequence Management Department 34.
P2: The document record creation directions original sequence Management

Department 34 gives an electronic filing document 71 and the document record information 81 to security hardware, and directs creation of a document record.
P3: The cipher-processing section 38 in hash value count security hardware calculates the hash value 82 of an electronic filing document 71.
P4: The hash value connection cipher-processing section 38 connects a hash value 82 with the document record information 81.
P5: The alteration detection information generation cipher-processing section 38 generates alteration detection information using the individual key 64 of SA as well as processing of drawing 15 , connects alteration detection information with the document record information 81, and generates the document record 83.
P6: The document record answerback cipher-processing section 38 makes the document record 83 a processing result, and returns it to the original sequence Management Department 34.
P7: The original sequence Management Department 34 transmits the document record 83 to a client.
[0068] Next, the registration which is the basic function of SA, retrieval, document record verification, identity verification, updating, migration, check-out check-in, and state-transition acquisition are explained.
[0069] Drawing 17 shows the situation of registration of an electronic filing document. Registration is registering into SA as the original the electronic filing document which the client's generated. Here, processing is performed by the following procedures.
P1: A client draws up the electronic filing document 71 of a file name 91, and creates the information depending on service as registration information 72 like attributes, such as ******, or a storage time.
P2: A client enciphers a file name 91, an electronic filing document 71, and the registration information 72 with the session key between a client and SA, and transmits to SA. In drawing 17 , the alphabetic character "SE" surrounded with the circle means that information is enciphered with the session key.
P3: SA decrypts the received information, connects with an electronic filing document 71 and the registration information 72 the information which generated automatically and generated management information including Discernment ID, the date and time of creation, alteration detection information, etc. to an electronic filing document 71, and generates the original 74 of the original.
P4: SA publishes the document record 83 as a result of registration.

Information as shown in drawing 16 is included in the document record 83. Among these, as connection place information on SA, the alias (alias) name of SA is used, for example. Fundamentally, other processings are performed using this document record 83.
P5: SA enciphers the document record 83 with a session key, and notifies it to a client.
P6: A client decrypts the received information, relates the document record 83 with a file name 91, and updates information.
[0070] Drawing 18 shows the situation of retrieval (reference) of an electronic filing document. Retrieval is taking out the information on a document record (discernment ID) for the electronic filing document currently kept by SA as a key. Here, processing is performed by the following procedures.
P1: A client chooses the document record 83 of the electronic filing document for retrieval, and checks SA accessed from connection place information.
P2: A client sends the document record 83 to SA.
P3: SA searches the original 74 by using discernment ID of the document record 83 as a key.
P4: SA notifies the electronic filing document of the searched original 74 to a client.
P5: A client relates the received electronic filing document with a file name 91, and updates information.
[0071] Drawing 19 shows the situation of verification of a document record. Document record verification is verifying whether the document record currently held at the client being the newest thing. In drawing 19 , the condition of the electronic original in SA is changing with updating etc., and the newest document record is newly notified. Here, processing is performed by the following procedures.
P1: A client chooses the electronic filing document for verification. Here, the electronic filing document 93 of a file name 92 is chosen.
P2: A client sends the document record 94 of an electronic filing document 93 to SA.
P3: SA takes out the original sequence ID from the discernment ID of the document record 94 sent from the client, and a time stump searches the newest electronic original 95 in the original sequence corresponding to the original sequence ID. And the discernment ID of the electronic original 95 is compared with the discernment ID of the document record 94. If both are in agreement, it turns out that it is the newest thing and both are not in agreement, as for the document record 94, it turns out that the condition of the

electronic original is changing.
P4: SA detects that the condition of the electronic original is changing and creates the newest document record 96.
P5: SA notifies the newest document record 96 to a client.
P6: A client relates the notified document record 96 with a file name 91, and updates information. Then, in acquiring the newest electronic filing document, it acquires an electronic filing document by retrieval processing of drawing 18 using the document record 96.
[0072] Drawing 20 shows the situation of identity verification. It is verifying whether the electronic filing document which the client's saves, and the electronic original in SA being the same as that of identity verification. Here, processing is performed by the following procedures.
P1: A client chooses the electronic filing document 93 and the document record 94 for verification.
P2: A client sends the document record 94 and an electronic filing document 93 to SA.
P3: SA calculates the alteration detection information on the electronic filing document 93 sent from the client, and verifies whether both are the same as compared with the alteration detection information on the electronic original 97 in SA to which the document record 94 points.
P4: SA signs the verification result 98 and notify it to a client.
P5: A client checks the verification result 98.
[0073] Drawing 21 shows the situation of renewal of an electronic filing document. Updating is relating the electronic filing document in the client corresponding to the electronic filing document in SA with the electronic filing document in SA as an updating document. Here, processing is performed by the following procedures.
P1: A client draws up an electronic filing document D2 as an updating document, and chooses the registration information G2 in connection with the document record R1 of the electronic filing document D1 for updating, an electronic filing document D2, and an electronic filing document D2.
P2: A client sends the document record R1, an electronic filing document D2, and the registration information G2 to SA.
P3: SA acquires the electronic original O1 corresponding to the document record R1, updates the time stump part of ID1 which is the discernment ID, and generates ID2 as new discernment ID. And an electronic filing document D2 is associated and registered into ID2, and the electronic original O2 is generated. At this time, the management information M1 of the electronic

original O1 and the registration information G1 are updated, and serve as management information M2 and registration information G3, respectively. Registration information G3 includes the registration information G1 and the registration information G2.
P4: SA creates the document record R2 of the updated electronic original O2.
P5: SA notifies the document record R2 to a client.
P6: A client relates the document record R2 with the file name of an electronic filing document D2, and updates information.
[0074] Drawing 22 and drawing 23 show the situation of migration of an electronic filing document. Migration is moving the electronic filing document in SA to other SAs. The information on the electronic filing document of a moved material may be left behind or eliminated according to service arrangement. Here, it shall leave the information on the electronic filing document of a moved material, and processing is performed by the following procedures.
P1: A client chooses the electronic filing document D1 and the migration place SA which move. The list of migration places SA is shown from the moved material SA if needed.
P2: A client sends the information 101 which specifies the document record R1 of an electronic filing document D1, and the migration place SA to the moved material SA.
P3: The moved material SA performs export processing to the electronic filing document D1 of the electronic original O1 to which the document record R1 points. First, Discernment ID connects the electronic filing document D1 which is ID1, management information M1, and the registration information G1. Next, alteration detection information is generated to connection data using the common keys (an individual share key, group share key, etc.) which the moved material SA is sharing with the migration place SA. And alteration detection information is connected with the original connection data, and pack DODETA 102 is generated.
P4: The moved material SA sends pack DODETA 102 to the migration place SA.
P5: The migration place SA verifies the existence of an alteration of pack DODETA 102, and performs import processing. In this processing, pack DODETA 102 is unpacked and an electronic filing document D1, management information M1, and the registration information G1 are taken out.
P6: The migration place SA updates the time stump and Physics ID of ID1,

and generates ID2 which is the discernment ID from which a time stump and Physics ID differ.
P7: The migration place SA sends the denial prevention record 103 and ID2 to the moved material SA as processing of the denial prevention by 3 way handshake.
P8: The moved material SA updates the received time stump of ID2, generates ID3, relates it with ID3, and register it as information on the electronic filing document which moved the hash value 104 of an electronic filing document D1 (electronic original O3). The management information M3 to which ID2 which is the discernment ID of a migration place was added, and the registration information G1 are included in the electronic original O3.
P9: The moved material SA sends the denial prevention record 103 to the migration place SA as processing of the denial prevention by 3 way handshake.
P10: Relate the migration place SA with ID2, and register it as an electronic filing document (electronic original O2) which has moved the electronic filing document D1. The management information M2 to which ID1 which is the discernment ID of a moved material was added, and the registration information G1 are included in the electronic original O2.
P11: The moved material SA generates the document record R3 including the information on ID2.
P12: The moved material SA transmits the document record R3 to a client.
P13: The migration place SA generates the document record R2 including the information on ID1.
P14: The migration place SA transmits the document record R2 to a client.
P15: A client relates the document records R2 and R3 with the file name of an electronic filing document D1, and updates information.
[0075] Drawing 24 shows the situation of check-out and check-in. Check-out is making it not change the condition of the original until it locks the original registered into SA by the demand from a user and has a check-in demand. Moreover, check-in is canceling the lock of the original by the demand from a user. Here, processing is performed by the following procedures.
P1: A client chooses the electronic filing document D1 for check-out.
P2: A client sends the document record R1 of an electronic filing document D1 to SA, and requires check-out.
P3: SA performs check-out processing. First, a check-out attribute is given to the management information M1 of the electronic original O1 containing an electronic filing document D1, the time stump of ID1 which is Discernment

ID is updated, and ID2 from which a time stump differs is generated. And the document record R2 which has a check-out attribute is created.
P4: SA notifies the document record R2 to a client.
P5: A client updates an electronic filing document D1 to an electronic filing document D2. This update process can also be performed to the electronic filing document of ID2 in SA not only using the inside of a client but using an updating function. Moreover, an update process is good in a multiple-times line.
P6: A client sends the registration information G2 on the document record R2, the final electronic filing document D2, and an electronic filing document D2 to SA, and requires check-in.
P7: SA performs check-in processing. First, the time stump of ID2 is updated, ID3 is generated, a check-in attribute is given to management information M1, and management information M2 is generated. And an electronic filing document D2 is registered as the electronic original O2.
P8: SA creates the document record R3 which has a check-in attribute.
P9: SA notifies the document record R3 to a client.
P10: A client relates the document record R3 with the file name of an electronic filing document D2, and updates information.
[0076] Drawing 25 shows the situation of state-transition acquisition. State-transition acquisition is acquiring the state-transition information which shows how the condition of the electronic original which a document record's points out having changed. State-transition information is equivalent to the hysteresis of the actuation performed to the electronic original, and is held as a part of management information. Here, processing is performed by the following procedures.
P1: A client chooses the electronic filing document 93 which should acquire state-transition information.
P2: A client sends the document record 94 of an electronic filing document 93 to SA.
P3: SA acquires the state-transition information 105 from the newest management information of the electronic original 97 in SA to which the document record 94 points.
P4: SA notifies the state-transition information 105 to a client.
P5: A client checks the contents of the state-transition information 105.
[0077] Drawing 26 shows the example of state-transition information. It is recorded on this state-transition information that User A registered the original into SA1, User B moved the original to SA2 from SA1 14:00, User C created

the copy of the original to 15:00, and User D moved the original to 12:00 on February 17, 1998 from SA2 at SA3 16:00. Therefore, a user can pursue the condition of the electronic original from the time of registration to the present by referring to state-transition information.

[0078] Although registered with SA mainly by making the electronized important document into an electronic filing document with the operation gestalt explained above, it is possible to register the electronic intelligence of the arbitration of a format of arbitration into SA besides it. For example, voice data, image data, a video data, etc. are registered, and it can manage like an electronic filing document.

[0079] By the way, SAs 11 and 21 of drawing 3 , a client 12, and a terminal 22 can be constituted using an information processor (computer) as shown in drawing 27 . The information processor of drawing 27 is equipped with CPU (central processing unit)111, memory 112, an input unit 113, an output unit 114, external storage 115, the medium driving gear 116, and network connection equipment 117, and they are mutually connected by the bus 118.

[0080] Memory 112 stores the program and data which are used for processing including ROM (read only memory), RAM (random access memory), etc. For example, the original sequence Management Department 34 which showed drawing 4 , and the registration bond creation section 35 are stored in memory 112 as a program module. CPU111 performs required processing by performing a program using memory 112.

[0081] Input devices 113 are a keyboard, a pointing device, a touch panel, etc., and are used for the directions from a user or a manager, or an informational input. Output units 114 are a display, a printer, a loudspeaker, etc., and are used for an inquiry to a user or a manager, or the output of a processing result.

[0082] External storage 115 is a magnetic disk drive, an optical disk unit, magneto-optic-disk (magneto-optical disk) equipment, etc. The information processor saves an above-mentioned program and data at this external storage 115, and can load and use them for memory 112 if needed. Moreover, external storage 115 is used also as the document storage section 36 of drawing 4 , and the physical ID creation section 37.

[0083] The medium driving gear 116 drives the portable record medium 119, and accesses the contents of record. As a portable record medium 119, record media which arbitration can computer read, such as a memory card, a floppy disk, CD-ROM (compact disk read only memory), an optical disk, and a magneto-optic disk, are used. The user stores an above-mentioned program

and data in this portable record medium 119, and can load and use them for memory 112 if needed. Moreover, the portable record medium 119 is used also as a secure medium 16 of drawing 3 .

[0084] Network connection equipment 117 communicates with external equipment through the network (circuit) of arbitration, such as LAN (local area network), and performs data conversion accompanying a communication link. An information processor can use an above-mentioned program and data for memory 112 for reception and them from external equipment through network connection equipment 117 if needed, loading. Network connection equipment 117 corresponds to the network interface 31 of drawing 4 .

[0085] Drawing 28 shows the record medium which can supply a program and data and in which computer reading is possible to the information processor of drawing 27 . The program and data which were saved in the portable record medium 119 or the external database 120 are loaded to memory 112. And CPU111 performs the program using the data, and performs required processing.

[0086]

[Effect of the Invention] According to this invention, apart from the computing environment which a user uses, electronic original management equipment is formed and processing of registration of an electronic filing document, updating, migration, etc. is performed using the registration bond which electronic original management equipment publishes. This becomes possible to an electronic filing document to give the safety more than a paper medium and an EQC (original nature).

[Translation done.]

* NOTICES *

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2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1] As opposed to a registration means to register electronic intelligence as original information, and said electronic intelligence A grant means to give the logical identifier information which identifies this electronic intelligence uniquely logically, and the whereabouts identification information showing the physical whereabouts of this electronic intelligence, The management tool which manages said original information using the combination identification information based on the combination of said logical identifier information and said whereabouts identification information, Electronic original management equipment characterized by having an issue means to publish registration bond information that it is used for access to said original information, including said combination identification information.
[Claim 2] A user is electronic original management equipment according to claim 1 characterized by accessing said original information registered into said electronic original management equipment using said combination identification information contained in said registration bond information.
[Claim 3] It is electronic original management equipment according to claim 1 characterized by judging that this electronic intelligence is an illegal copy if said management tool compares the physical whereabouts where said whereabouts identification information and said electronic intelligence are saved and this whereabouts identification information does not support this physical whereabouts.
[Claim 4] It is electronic original management equipment according to claim 1 which is further equipped with a creation means create said logical identifier information from the type attribute information and the time stump information for discriminating a copy from the identification information of

said electronic original management equipment, the electronic intelligence identification information in equipment, and original, and is characterized by for said management tool to manage the combination of the identification information of this electronic original management equipment, and electronic-intelligence identification information as original sequence identification information.

[Claim 5] Said management tool is electronic original management equipment according to claim 4 which treats all the electronic intelligence registered as original information, and is characterized by giving the type attribute information that original is expressed to the electronic intelligence this registered at the time of registration.

[Claim 6] It is electronic original management equipment according to claim 5 which generates the logical identifier information which said management tool did not change said original sequence identification information and said time stump information at the creation time of the copy of said electronic intelligence, but changed said type attribute information into the type attribute information that a copy is expressed, and is characterized by giving the generated logical identifier information to the copy of this electronic intelligence.

[Claim 7] A user is electronic original management equipment according to claim 4 characterized by judging whether it is referring to said type attribute information included in said registration bond information, and they are whether said electronic intelligence is original and a copy.

[Claim 8] It is electronic original management equipment according to claim 7 characterized by judging a copy of the electronic intelligence at which time said user is referring to said time stump information included in said registration bond information when said electronic intelligence is a copy, and this copy is.

[Claim 9] It is electronic original management equipment according to claim 4 characterized by for said management tool not changing said original sequence identification information and said type attribute information at the time of renewal of said original information, but changing said time stump information, and managing the original information updating before and after updating.

[Claim 10] Said management tool is electronic original management equipment according to claim 4 characterized by generating a series of instances of original information according to a change [time series / information / said / original], and treating these a series of instances as one

original sequence.
[Claim 11] It is electronic original management equipment according to claim 4 which said management tool does not change the original sequence identification information of original information and type attribute information which have moved, but changes time stump information when original information has moved to said electronic original management equipment from other electronic original management equipments, and is characterized by to manage the original information which has this moved.
[Claim 12] The management tool which generates a series of corresponding instances of original information according to a change [time series / electronic intelligence], and manages these a series of instances as one original sequence, Electronic original management equipment characterized by having a grant means to give original sequence identification information to said original sequence, and an issue means to publish registration bond information that it is used for access to one instance in said a series of instances, including said original sequence identification information.
[Claim 13] Electronic original access equipment characterized by to have a storing means to store the registration bond information containing the combination identification information based on combination with the whereabouts identification information showing the physical whereabouts of logical identifier information and this electronic intelligence which identifies electronic intelligence uniquely logically, and a demand means require access to said electronic intelligence registered as original information using said registration bond information.
[Claim 14] The electronic original management method characterized by to access said original information using the registration bond information which registers electronic intelligence as original information, gives the logical identifier information which identifies this electronic intelligence uniquely logically, and the whereabouts identification information showing the physical whereabouts of this electronic intelligence to said electronic intelligence, manages said original information using the combination identification information based on the combination of said logical identifier information and said whereabouts identification information, and contains said combination identification information.
[Claim 15] The electronic original management method characterized by accessing one instance in said a series of instances using the registration bond information which generates a series of corresponding instances of original information according to a change [time series / electronic intelligence],

manages said a series of instances as one original sequence, gives original sequence identification information to said original sequence, and contains said original sequence identification information.

[Translation done.]

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